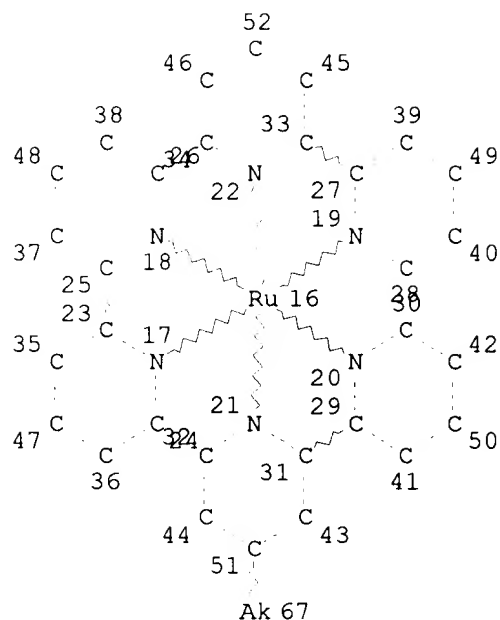


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L11 STR

N 66



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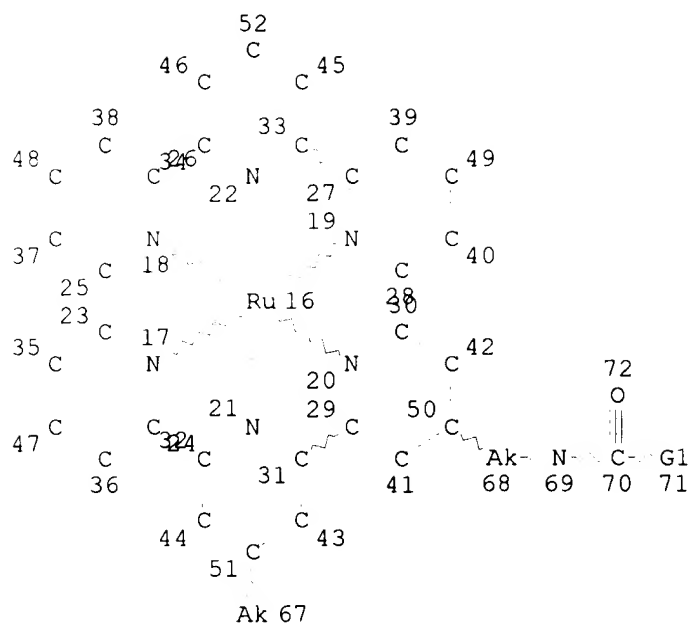
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 NUMBER OF NODES IS 39

STEREO ATTRIBUTES: NONE

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L18 STR



79

Page 1-A

Ak

Ak N Ak
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Page 2-A

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CONNECT IS E1 RC AT 67

CONNECT IS E2 RC AT 68

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DEFAULT MLEVEL IS ATOM

GGCAT IS LOC AT 67

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DEFAULT ECLEVEL IS LIMITED

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NUMBER OF NODES IS 50

STEREO ATTRIBUTES: NONE

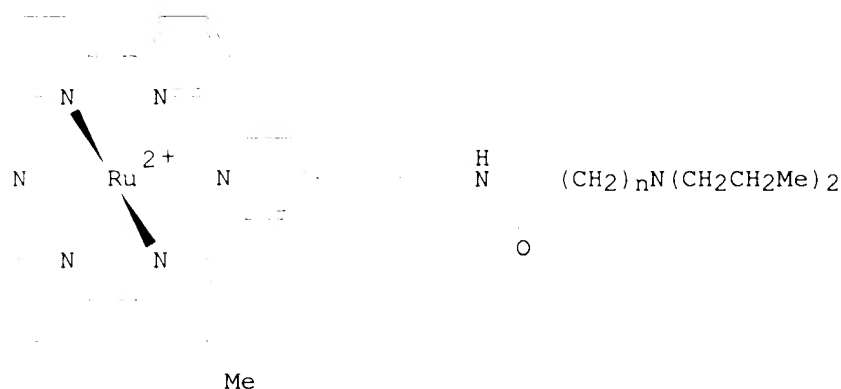
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L20 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2003 ACS
 ACCESSION NUMBER: 2001:435468 HCAPLUS
 DOCUMENT NUMBER: 135:43116
 TITLE: Coreactant-including electrochemiluminescent
 compounds, methods, systems and kits
 INVENTOR(S): Sun, Ji; Liang, Pam; Martin, Mark T.; Dong, Liwen
 PATENT ASSIGNEE(S): USA
 SOURCE: U.S. Pat. Appl. Publ., 14 pp., Cont.-in-part of U.S.
 Ser. No. 484,766, abandoned.
 CODEN: USXXCO
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 6
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2001003647	A1	20010614	US 1997-936971	19970925
US 6120986	A	20000919	US 1997-880210	19970623
US 6165708	A	20001226	US 1997-880209	19970623
US 6316180	B1	20011113	US 1997-880353	19970623
WO 9915694	A1	19990401	WO 1998-US19038	19980911
W: JP				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
US 2001018187	A1	20010830	US 2000-742033	20001220
PRIORITY APPLN. INFO.:				
			US 1995-484766	B2 19950607
			US 1997-880209	A2 19970623
			US 1997-880210	A2 19970623
			US 1997-880353	A2 19970623
			US 1995-368429	A1 19950104
			US 1995-485419	A1 19950607
			US 1997-936971	A 19970925

GI



AB A method of generating an electrochemiluminescent emission, which comprises exposing an electrochemiluminescent label linked to a coreactant, to conditions suitable for inducing electrochemiluminescence; said compd.; a system for generating an electrochemiluminescent emission, which comprises said compd., means for exposing said compd. to electrochem. energy, and means for detecting or measuring luminescence emitted from said compd. or a compn. contg. same; and a kit for performing an assay using said compd. The relative electrochemiluminescence (ECL) efficiency of ruthenium chelate conjugates I ($n = 1-3$) (prepn. given) was detd. The longer linker allowed for more efficient ECL emission.

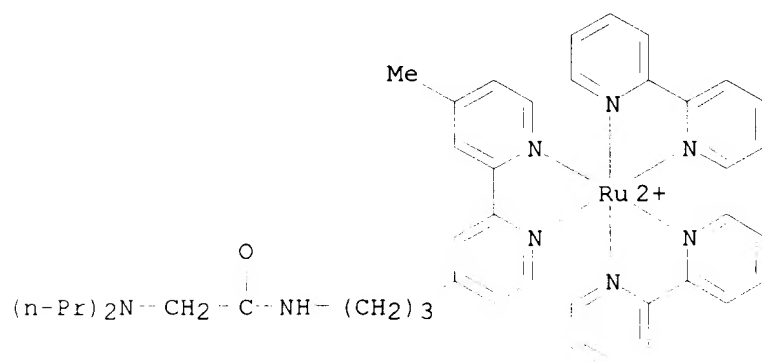
IT **344346-22-1P 344346-23-2P 344346-24-3P**

344346-25-4P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(coreactant-including electrochemiluminescent compds., methods, systems and kits)

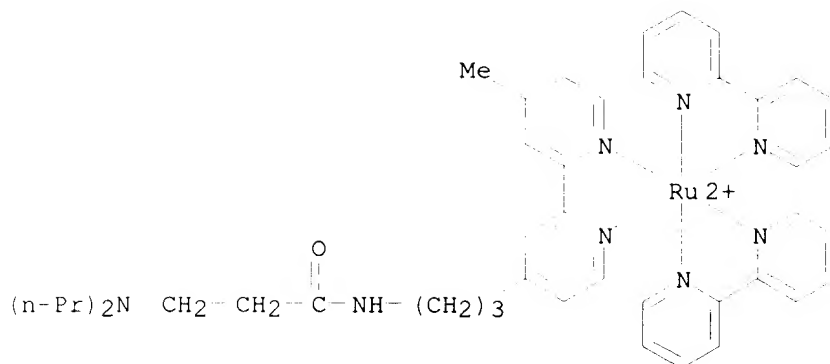
RN 344346-22-1 HCAPLUS

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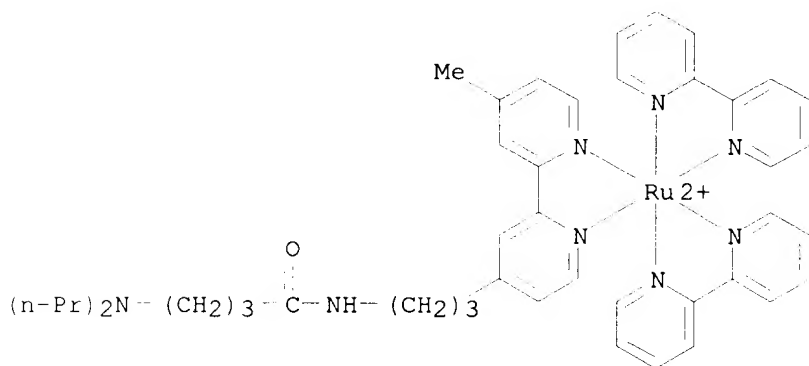
RN 344346-23-2 HCAPLUS

CN Ruthenium(2+), bis(2,2'-bipyridine-.kappa.N1,.kappa.N1')[3-(dipropylamino)-N-[3-(4'-methyl[2,2'-bipyridin]-4-yl-.kappa.N1,.kappa.N1')propyl]propanamide]-, (OC-6-33)-(9CI) (CA INDEX NAME)



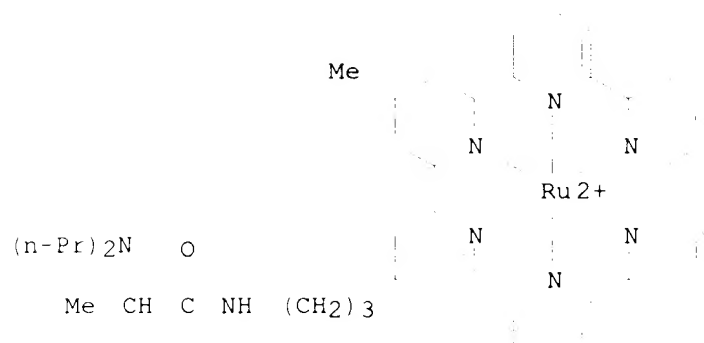
RN 344346-24-3 HCAPLUS

CN Ruthenium(2+), bis(2,2'-bipyridine-.kappa.N1,.kappa.N1')[4-(dipropylamino)-N-[3-(4'-methyl[2,2'-bipyridin]-4-yl-.kappa.N1,.kappa.N1')propyl]butanamide]-, (OC-6-33)- (9CI) (CA INDEX NAME)



RN 344346-25-4 HCAPLUS

CN Ruthenium(2+), bis(2,2'-bipyridine-.kappa.N1,.kappa.N1')[(2R)-2-(dipropylamino)-N-[3-(4'-methyl[2,2'-bipyridin]-4-yl-.kappa.N1,.kappa.N1')propyl]propanamide]-, (OC-6-33)- (9CI) (CA INDEX NAME)

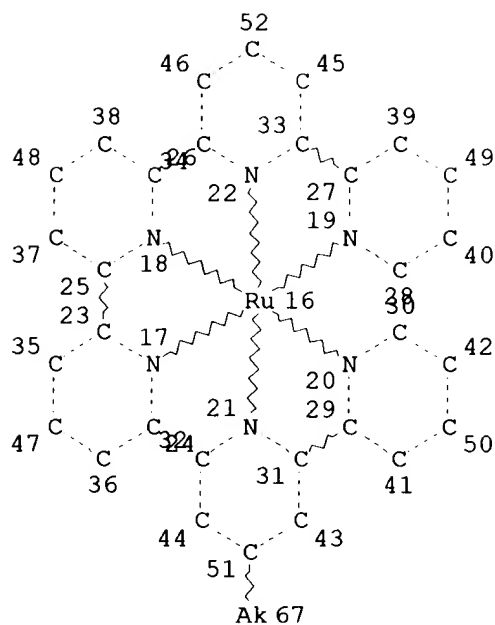


=> d que

L11

STR

N 66



NODE ATTRIBUTES:

NSPEC IS C AT 66
 CONNECT IS E3 RC AT 50
 CONNECT IS E3 RC AT 66
 CONNECT IS E1 RC AT 67
 DEFAULT MLEVEL IS ATOM
 GGCAT IS LOC AT 67
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED
 NUMBER OF NODES IS 39

STEREO ATTRIBUTES: NONE

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 L15 667 SEA FILE=HCAPLUS ABB=ON PLU=ON "LUMINESCENCE, CHEMILUMINESCEN
 CE (L) ELECTROCHEMILUMINESCENCE"+OLD/CT
 L16 180593 SEA FILE=HCAPLUS ABB=ON PLU=ON LUMINES? OR ELECTROCHEMILUM?
 OR CHEMILUM? OR L15
 L17 17 SEA FILE=HCAPLUS ABB=ON PLU=ON L14 AND L16

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L17 ANSWER 1 OF 17 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2003:74616 HCAPLUS

DOCUMENT NUMBER: 138:294768

TITLE: Quenching dynamics of the photoluminescence of

[Ru(bpy)3]2+-pendant PAMAM dendrimers by nitro aromatics and other materials

AUTHOR(S): Glazier, Samantha; Barron, Jason A.; Morales, Nelson; Ruschak, Amy Marie; Houston, Paul L.; Abruna, Hector D.

CORPORATE SOURCE: Department of Chemistry and Chemical, Biology Baker Laboratory, Cornell University, Ithaca, NY, 14853-1301, USA

SOURCE: Macromolecules (2003), 36(4), 1272-1278
CODEN: MAMOBX; ISSN: 0024-9297

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

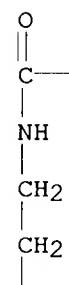
AB The Stern-Volmer quenching consts. (Ksv) for poly(amidoamine) (PAMAM) based dendrimers (generations G0-G4) modified with (4, 8, 16, 32 and 64) pendant [Ru(bpy)3]2+ (bpy = 2,2'-bipyridine) chromophores have been measured in the presence of three nitroarom. quenchers (2,4,6-trinitrotoluene = TNT, 2,4-dinitrotoluene = DNT, nitrotoluene = NT), two neg. charged quenchers K3Fe(CN)6 and Na4Fe(CN)6 and one energy transfer type quencher Fe(C5H5)2. The quenching efficiencies were calcd. for the dendrimers (G0-G4) in the presence of TNT and were found to peak for dend-16-Ru(bpy)3. The generation dependence of the quenching efficiency mirrors the calcd. crowding factor and the variations were attributed to changes in the 3-dimensional structure with generation (size) and the assocd. changes in the accessibility of the [Ru(bpy)3]2+-pendant groups. Electrostatic attractions between the pos. charged dendrimers and the neg. charged quenchers resulted in larger Ksv values when compared to the ref. complex, [Ru(bpy)3]2+. The addn. of electrolyte to an ionic strength of 0.1 M (KCl or NaCl) caused a diminution of the Ksv values by 60%, consistent with electrostatic interactions and charge screening effects.

IT **220720-41-2**
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process)
(G0; dynamics of quenching of fluorescence of poly(amidoamine)-based dendrimers contg. [Ru(bpy)3]2+ pendant by nitroarom. and hexacyanoferrate and ferrocene quenchers)

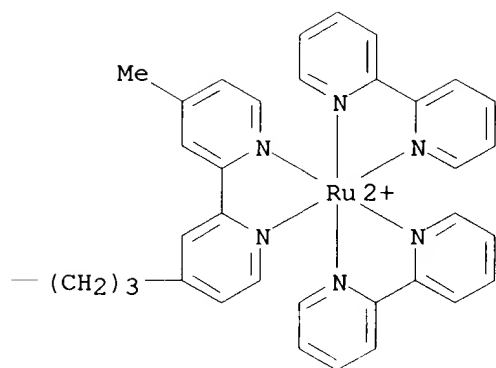
RN 220720-41-2 HCAPLUS

CN Ruthenium(8+), octakis(2,2'-bipyridine-.kappa.N1,.kappa.N1')[.mu.4-[N,N',N'',N'''-[1,2-ethanediylbis[nitrilobis[(1-oxo-3,1-propanediyl)imino-2,1-ethanediyl]]]tetrakis[4'-methyl[2,2'-bipyridine]-4-butanamide-.kappa.N1,.kappa.N1']]]]tetra- (9CI) (CA INDEX NAME)

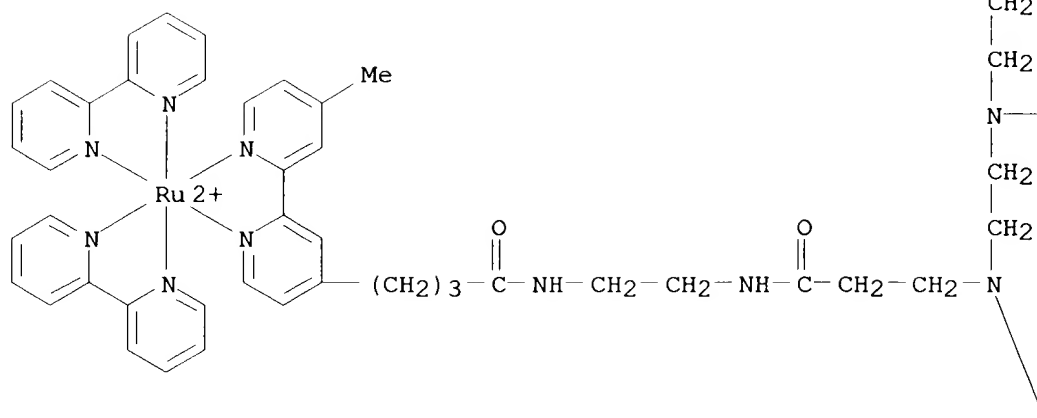
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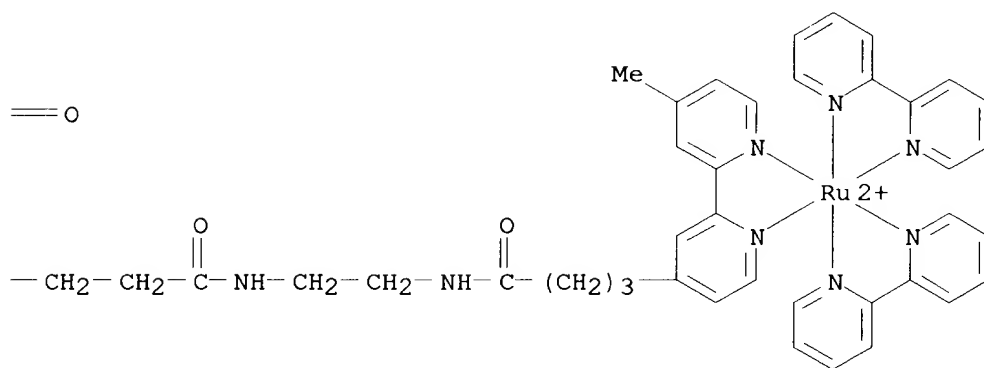
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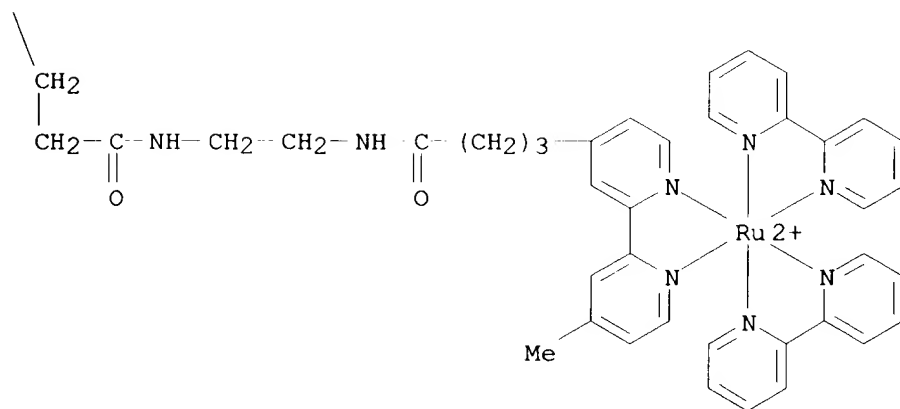
PAGE 2-A



PAGE 2-B



PAGE 3-B



REFERENCE COUNT: 34 THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 2 OF 17 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2002:655586 HCAPLUS

DOCUMENT NUMBER: 137:330971

TITLE: Photoinduced energy- and electron-transfer processes within dynamic self-assembled donor-acceptor arrays
 AUTHOR(S): Kercher, Michael; Koenig, Burkhard; Zieg, Harald; De Cola, Luisa

CORPORATE SOURCE: Institut fuer Organische Chemie, Universitaet Regensburg, Regensburg, 93040, Germany

SOURCE: Journal of the American Chemical Society (2002), 124(38), 11541-11551

CODEN: JACSAT; ISSN: 0002-7863

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The synthesis and the photophys. properties of a series of noncovalently assembled donor-acceptor systems, dyads, is reported. The presented approach uses an "innocent" coordination compd., a scandium(III) acetyl acetate deriv., as core and promotor of the dyad formation. Intercomponent photoinduced energy transfer or electron transfer within the dynamic assembly, which yields to a statistical library of donor-acceptor systems, is reported. The assemblies for energy-transfer processes are constituted by an energy donor, Ru(bpy)₃²⁺-based component (bpy = 2,2'-bipyridine), and by an energy-acceptor moiety, anthracene-based unit, both substituted with a chelating ligand, acetyl acetone, that via coordination with a scandium ion will ensure the formation of the dyad. If N,N,N',N'-tetramethyl-2,5-diaminobenzyl-substituted acetyl acetate ligands are used in the place of 9-acyl-anthracene, intramol. photoinduced electron transfer from the amino deriv. (electron donor) to the Ru(bpy)₃²⁺-unit was detected upon self-assembly, mediated by the scandium complex. The photophys. processes can be studied on the lifetime of the kinetically labile complexes.

IT 473546-25-7 473546-27-9

RL: FMU (Formation, unclassified); PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); FORM (Formation, nonpreparative); PROC (Process)

(photoinduced electron-transfer in self-assembled dynamic dyads formed in system contg. Sc(III) acetyl acetonate and Ru(bpy)₃²⁺ and tetramethyldiaminobenzene deriv. donor units)

RN 473546-25-7 HCAPLUS

CN Scandium(4+), bis[bis(2,2'-bipyridine- κ N1, κ N1')ruthenium][3-[[2,5-bis(dimethylamino)phenyl]methyl]-2,4-pentanedionato- κ O, κ O']bis[μ -[1-(4'-methyl[2,2'-bipyridin]-4-yl)- κ N1, κ N1']-1,3-butanedionato- κ O, κ O']]-, tetrakis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

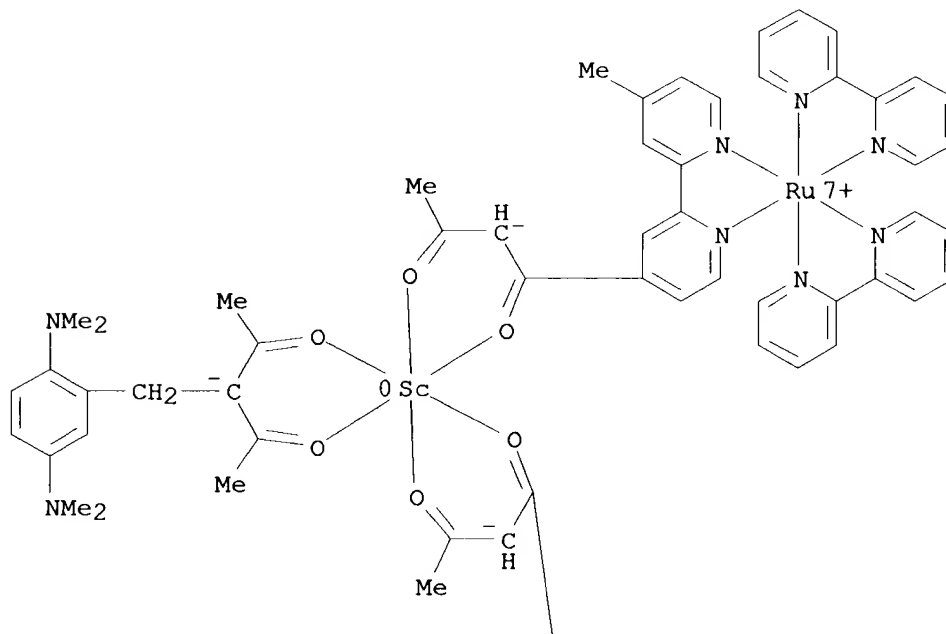
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CRN 473546-24-6

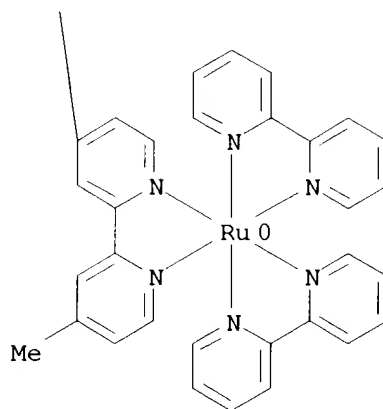
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CCI CCS

PAGE 1-A



PAGE 2-A

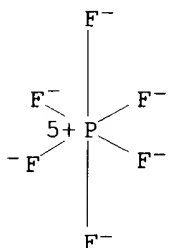


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



RN 473546-27-9 HCAPLUS

CN Scandium(2+), [bis(2,2'-bipyridine-.kappa.N1,.kappa.N1')ruthenium]bis[3-
[[2,5-bis(dimethylamino)phenyl]methyl]-2,4-pentanedionato-
.kappa.O,.kappa.O'] [.mu.-[1-(4'-methyl[2,2'-bipyridin]-4-yl-
.kappa.N1,.kappa.N1')-1,3-butanedionato-.kappa.O,.kappa.O']]-,
bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

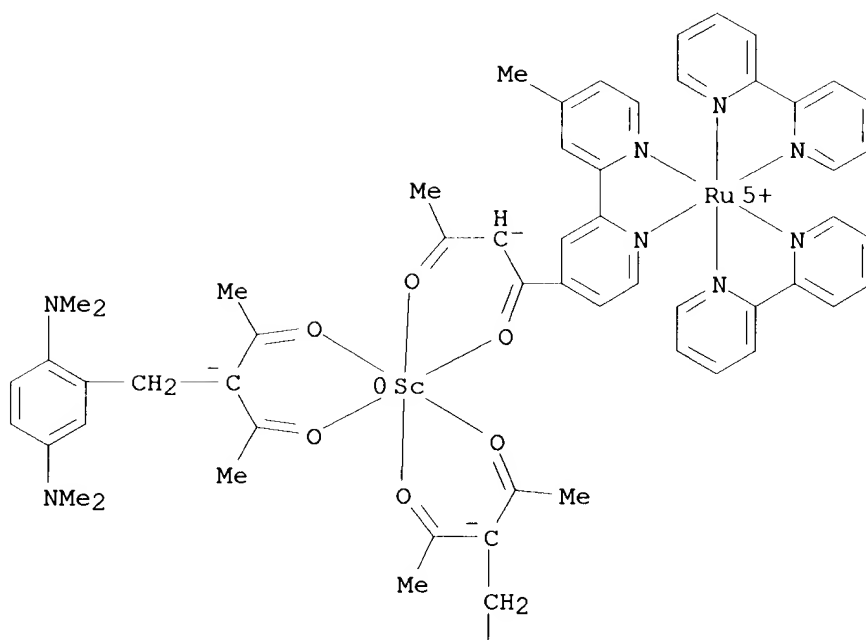
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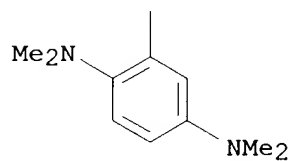
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CCI CCS

PAGE 1-A



PAGE 2-A

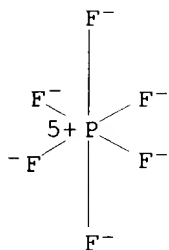


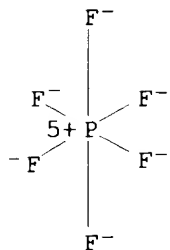
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CMF F6 P

CCI CCS





REFERENCE COUNT: 53 THERE ARE 53 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 3 OF 17 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2001:716916 HCAPLUS

DOCUMENT NUMBER: 136:12703

TITLE: Ultrafast Excited-State Energy Migration Dynamics in an Efficient Light-Harvesting Antenna Polymer Based on Ru(II) and Os(II) Polypyridyl Complexes

AUTHOR(S): Fleming, Cavan N.; Maxwell, Kimberly A.; DeSimone, Joseph M.; Meyer, Thomas J.; Papanikolas, John M.

CORPORATE SOURCE: Department of Chemistry Venable and Kenan Laboratories, The University of North Carolina, Chapel Hill, NC, 27599-3290, USA

SOURCE: Journal of the American Chemical Society (2001), 123(42), 10336-10347

CODEN: JACSAT; ISSN: 0002-7863

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A detailed study of the excited state energy migration dynamics that take place within an assembly of Ru(II) and Os(II) polypyridyl complexes linked together through a polymer backbone is presented. The energy migration process is initiated by the photoexcitation of the metal-to-ligand charge transfer (MLCT) transition in one of the Ru(II) complexes and terminated by energy transfer to a lower energy Os(II) trap. Energy transfer sensitization of Os(II) can occur in a single step if the excited state is formed adjacent to a trap, or after a series of hops between isoenergetic rutheniums prior to reaching a trap. The dynamics of the energy transfer process are followed by monitoring the growth of Os(II)*

luminescence at 780 nm. The kinetics of the growth are complex and can be fit by a sum of two exponentials. This kinetic complexity arises both from the presence of a distribution of donor-acceptor distances and the variety of time scales by which Os(II)* can be formed. The authors augmented the time-resolved expts. with Monte Carlo simulations, which provide insight into the polymer array's structure and at the same time form the basis of a mol.-level description of the energy migration dynamics. The simulations indicate that the most probable Ru* .fwdarw. Os energy transfer time is .apprx.400 ps while the time scale for Ru* .fwdarw. Ru hopping is approx. 1-4 ns. The time scale for Ru* .fwdarw. Ru hopping relative to its natural lifetime (1000 ns) suggests that this polymer system could be extended to considerably longer dimensions without an appreciable loss in its overall efficiency.

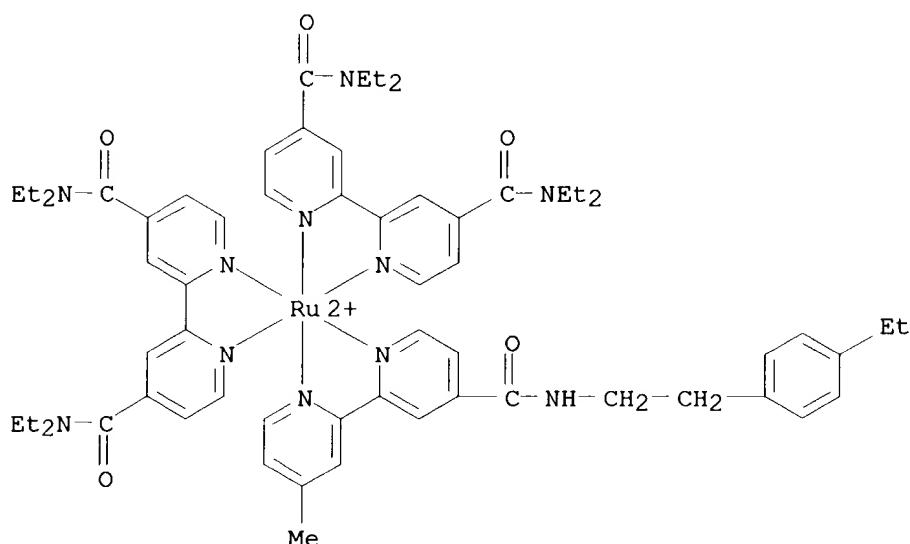
IT **262592-71-2D**, carboxylic acid deriv., amidated polystyrene complex
RL: PEP (Physical, engineering or chemical process); PRP (Properties);

PROC (Process)

(dynamics of migration of excited energy within Ru(II) and Os(II)
polypyridyl complexes linked together through polymer backbone)

RN 262592-71-2 HCAPLUS

CN Ruthenium(2+), [N-[2-(4-ethylphenyl)ethyl]-4'-methyl[2,2'-bipyridine]-4-carboxamide-.kappa.N1,.kappa.N1']bis(N,N,N',N'-tetraethyl[2,2'-bipyridine]-4,4'-dicarboxamide-.kappa.N1,.kappa.N1')-, (OC-6-31)-(9CI) (CA INDEX NAME)



REFERENCE COUNT: 95 THERE ARE 95 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 4 OF 17 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2001:435468 HCAPLUS

DOCUMENT NUMBER: 135:43116

TITLE: Coreactant-including **electrochemiluminescent** compounds, methods, systems and kits

INVENTOR(S): Sun, Ji; Liang, Pam; Martin, Mark T.; Dong, Liwen

PATENT ASSIGNEE(S): USA

SOURCE: U.S. Pat. Appl. Publ., 14 pp., Cont.-in-part of U.S. Ser. No. 484,766, abandoned.

CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 6

PATENT INFORMATION:

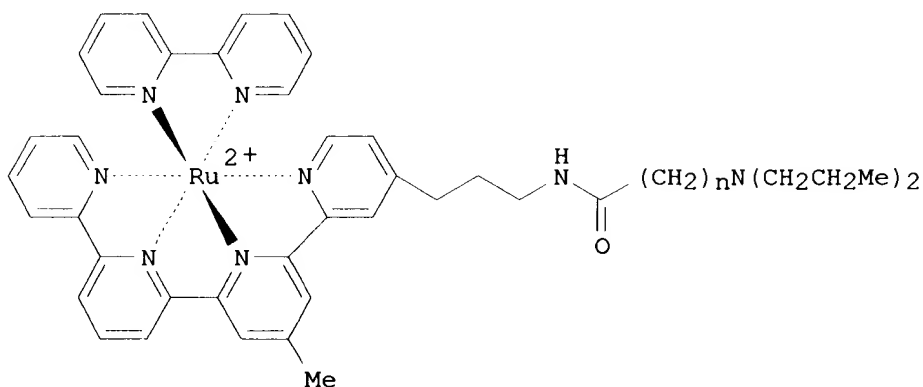
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US 6165708	A	20001226	US 1997-880209	19970623
US 6316180	B1	20011113	US 1997-880353	19970623
WO 9915694	A1	19990401	WO 1998-US19038	19980911

W: JP

RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL,
PT, SEUS 2001018187 A1 20010830
PRIORITY APPLN. INFO.:

US 2000-742033	20001220
US 1995-484766	B2 19950607
US 1997-880209	A2 19970623
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US 1997-880353	A2 19970623
US 1995-368429	A1 19950104
US 1995-485419	A1 19950607
US 1997-936971	A 19970925

GI



AB A method of generating a **electrochemiluminescent** emission, which comprises exposing an **electrochemiluminescent** label linked to a coreactant, to conditions suitable for inducing **electrochemiluminescence**; said compd.; a system for generating an **electrochemiluminescent** emission, which comprises said compd., means for exposing said compd. to electrochem. energy, and means for detecting or measuring **luminescence** emitted from said compd. or a compn. contg. same; and a kit for performing an assay using said compd. The relative **electrochemiluminescence** (ECL) efficiency of ruthenium chelate conjugates I (n = 1-3) (prepn. given) was detd. The longer linker allowed for more efficient ECL emission.

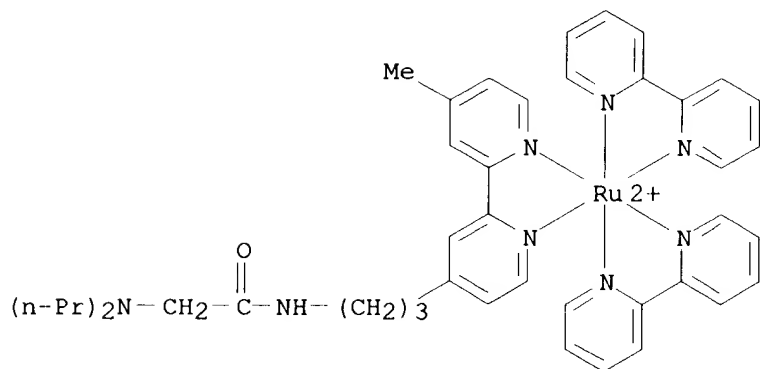
IT **344346-22-1P 344346-23-2P 344346-24-3P**

344346-25-4P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(coreactant-including **electrochemiluminescent** compds.,
methods, systems and kits)

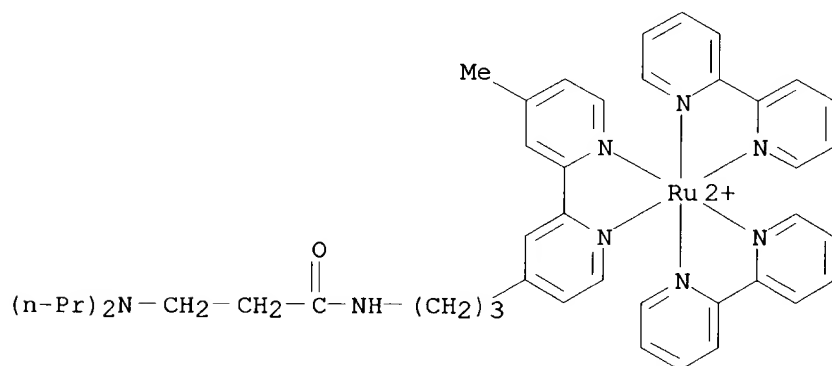
RN 344346-22-1 HCAPLUS

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]-, (OC-6-33)- (9CI) (CA INDEX NAME)



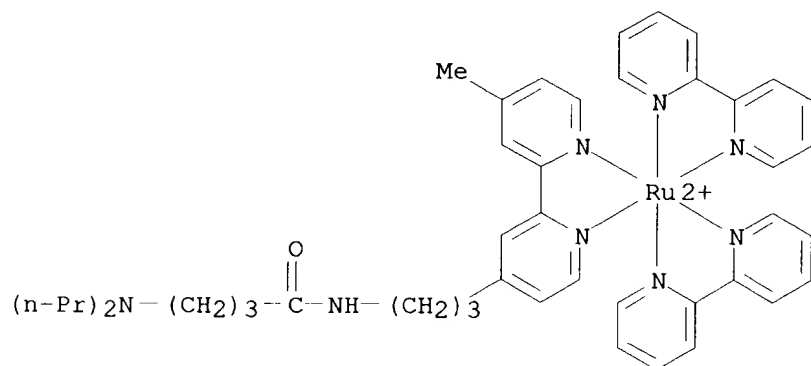
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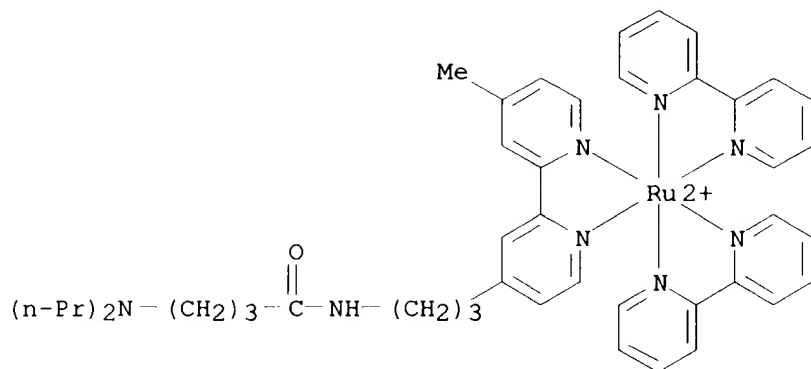
CN Ruthenium(2+), bis(2,2'-bipyridine-.kappa.N1,.kappa.N1') [3-(dipropylamino)-N-[3-(4'-methyl[2,2'-bipyridin]-4-yl-.kappa.N1,.kappa.N1')propyl]propanamide]-, (OC-6-33)- (9CI) (CA INDEX NAME)



RN 344346-24-3 HCAPLUS

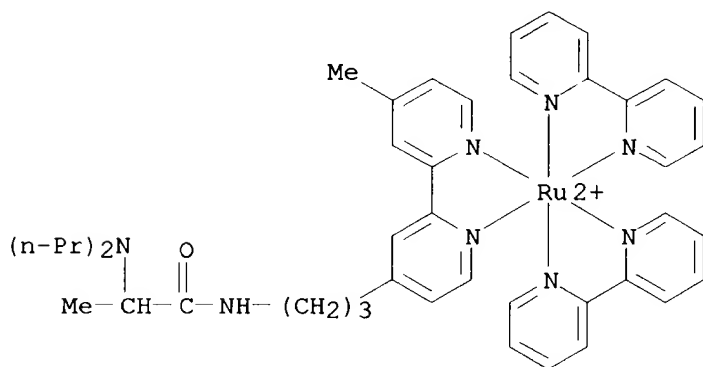
CN Ruthenium(2+), bis(2,2'-bipyridine-.kappa.N1,.kappa.N1') [4-(dipropylamino)-N-[3-(4'-methyl[2,2'-bipyridin]-4-yl-.kappa.N1,.kappa.N1')propyl]butanamide]-, (OC-6-33)- (9CI) (CA INDEX NAME)





RN 344346-25-4 HCAPLUS

CN Ruthenium(2+), bis(2,2'-bipyridine-.kappa.N1,.kappa.N1')[(2R)-2-(dipropylamino)-N-[3-(4'-methyl[2,2'-bipyridin]-4-yl-.kappa.N1,.kappa.N1')propyl]propanamide]-, (OC-6-33)-(9CI) (CA INDEX NAME)



L17 ANSWER 5 OF 17 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2001:257215 HCAPLUS

DOCUMENT NUMBER: 135:40010

TITLE: Covalently linked ruthenium(II)-manganese(II) complexes: distance dependence of quenching and electron transfer

AUTHOR(S): Berg, Katja E.; Tran, Anh; Raymond, Mary Katherine; Abrahamsson, Malin; Wolny, Juliusz; Redon, Sophie; Andersson, Mikael; Sun, Licheng; Styring, Stenbjorn; Hammarstrom, Leif; Toftlund, Hans; Akermark, Bjorn

CORPORATE SOURCE: Dept. of Organic Chemistry, Stockholm University, Stockholm, 106 91, Swed.

SOURCE: European Journal of Inorganic Chemistry (2001), (4), 1019-1029

CODEN: EJICFO; ISSN: 1434-1948

PUBLISHER: Wiley-VCH Verlag GmbH

DOCUMENT TYPE: Journal

LANGUAGE: English

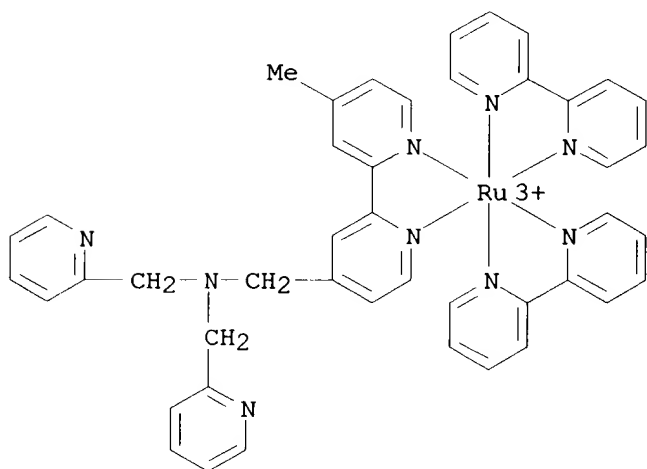
AB Continuing the authors' development of artificial models for photosystem II in green plants, compds. were prepd. in which a Ru(bpy)₃²⁺ photosensitizer is covalently linked to a Mn(II) electron donor. In addn. to a trispicolylamine ligand, two other Mn ligands, dipicolylamine and aminodiacetic acid, were introduced to study ligands that are appropriate for the construction of Mn dimers with open coordination sites for the binding of H₂O. Coordination equil. of the Mn ions were monitored by EPR. The interactions between the Ru and Mn moieties were probed by flash photolysis, cyclic voltammetry and steady-state and time-resolved emission measurements. The quenching of the Ru(II) excited state by Mn(II) is rapid in complexes with short Ru-Mn distances. Nevertheless, each Ru(II) species could be photooxidized by bimol. quenching with methylviologen, and the subsequent electron transfer from Mn(II) to Ru(III) could be monitored.

IT 344367-74-4 344367-75-5 344367-78-8
344367-79-9

RL: FMU (Formation, unclassified); PRP (Properties); FORM (Formation, nonpreparative)
(elec. potential of couple contg.)

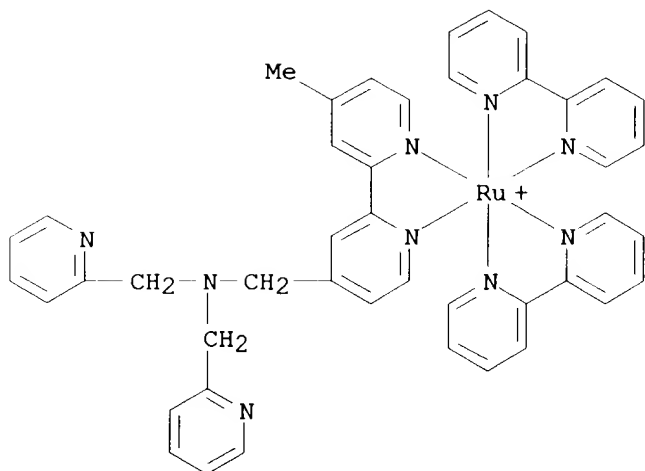
RN 344367-74-4 HCAPLUS

CN Ruthenium(3+), bis(2,2'-bipyridine-.kappa.N1,.kappa.N1')[4'-methyl-N,N-bis(2-pyridinylmethyl)[2,2'-bipyridine]-4-methanamine-.kappa.N1,.kappa.N1']-, (OC-6-33)- (9CI) (CA INDEX NAME)



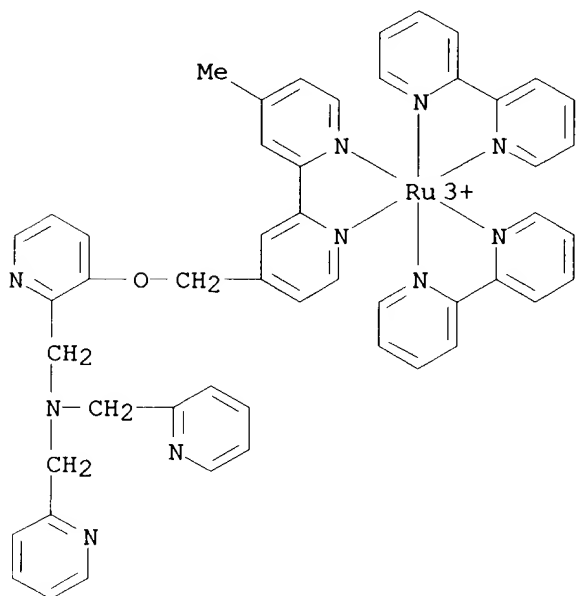
RN 344367-75-5 HCAPLUS

CN Ruthenium(1+), bis(2,2'-bipyridine-.kappa.N1,.kappa.N1')[4'-methyl-N,N-bis(2-pyridinylmethyl)[2,2'-bipyridine]-4-methanamine-.kappa.N1,.kappa.N1']-, (OC-6-33)- (9CI) (CA INDEX NAME)



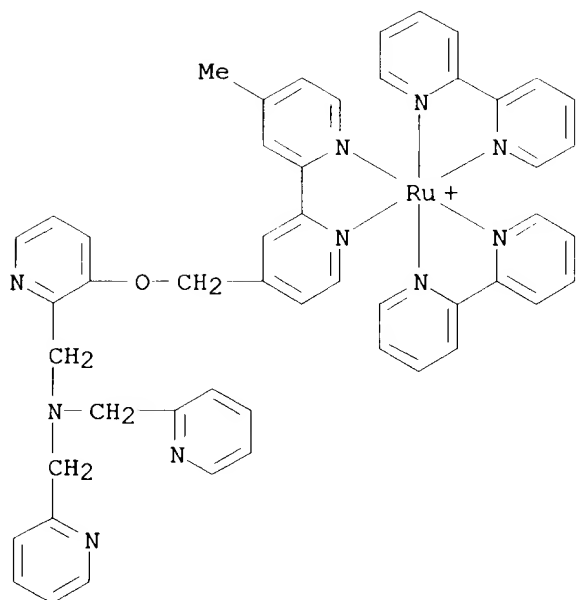
RN 344367-78-8 HCAPLUS

CN Ruthenium(3+), bis(2,2'-bipyridine-.kappa.N1,.kappa.N1')[3-[(4'-methyl[2,2'-bipyridin]-4-yl-.kappa.N1,.kappa.N1')methoxy]-N,N-bis(2-pyridinylmethyl)-2-pyridinemethanamine]-, (OC-6-33)- (9CI) (CA INDEX NAME)



RN 344367-79-9 HCAPLUS

CN Ruthenium(1+), bis(2,2'-bipyridine-.kappa.N1,.kappa.N1')[3-[(4'-methyl[2,2'-bipyridin]-4-yl-.kappa.N1,.kappa.N1')methoxy]-N,N-bis(2-pyridinylmethyl)-2-pyridinemethanamine]-, (OC-6-33)- (9CI) (CA INDEX NAME)



IT **193222-75-2**

RL: PEP (Physical, engineering or chemical process); PRP (Properties);

PROC (Process)

(photophys.)

RN 193222-75-2 HCAPLUS

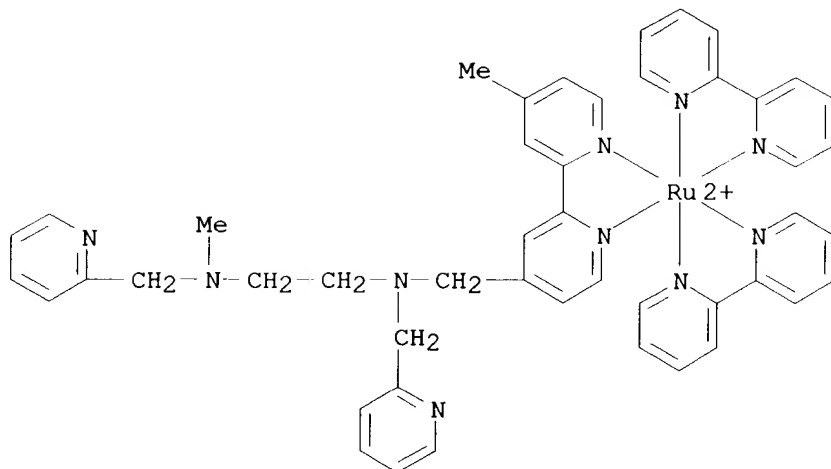
CN Ruthenium(2+), bis(2,2'-bipyridine-.kappa.N1,.kappa.N1') [N-methyl-N'-[(4'-methyl[2,2'-bipyridin]-4-yl-.kappa.N1,.kappa.N1')methyl]-N,N'-bis(2-pyridinylmethyl)-1,2-ethanediamine]-, (OC-6-33)-, bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

CM 1

CRN 193222-74-1

CMF C47 H46 N10 Ru

CCI CCS

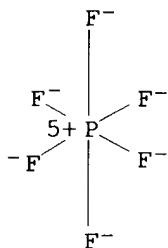


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS

IT **344367-51-7P 344367-60-8P 344367-63-1P**

RL: PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); RACT (Reactant or reagent)
 (prepn. and complexation with manganese dichloride and cyclic voltammetry and photophys.)

RN 344367-51-7 HCAPLUS

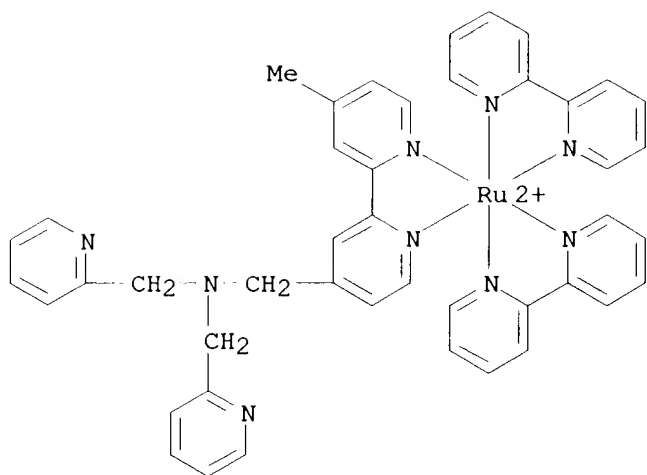
CN Ruthenium(2+), bis(2,2'-bipyridine- κ .N1, κ .N1') [4'-methyl-N,N-bis(2-pyridinylmethyl) [2,2'-bipyridine]-4-methanamine- κ .N1, κ .N1']-, (OC-6-33)-, bis[hexafluorophosphate(1-)] (9CI)
 (CA INDEX NAME)

CM 1

CRN 344367-50-6

CMF C44 H39 N9 Ru

CCI CCS

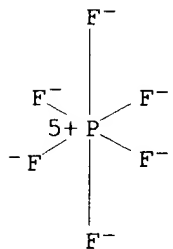


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



RN 344367-60-8 HCAPLUS

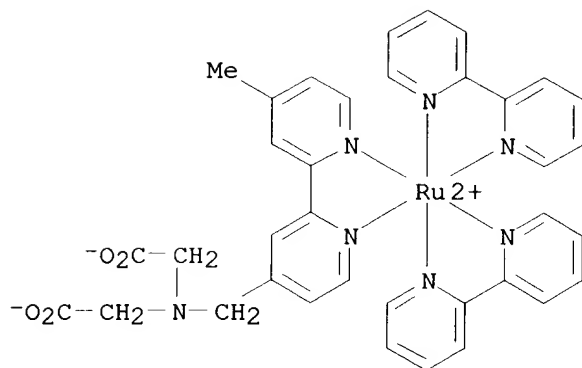
CN Ruthenium, bis(2,2'-bipyridine-.kappa.N1,.kappa.N1') [N-(carboxymethyl)-N-
 [(4'-methyl[2,2'-bipyridin]-4-yl-.kappa.N1,.kappa.N1')methyl]glycinato(2-
)]-, (OC-6-33)-, bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

CM 1

CRN 344367-59-5

CMF C36 H31 N7 O4 Ru

CCI CCS

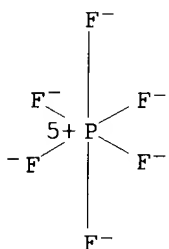


CM 2

CRN 16940-81-1

CMF F6 P . H

CCI CCS

● H⁺

RN 344367-63-1 HCAPLUS

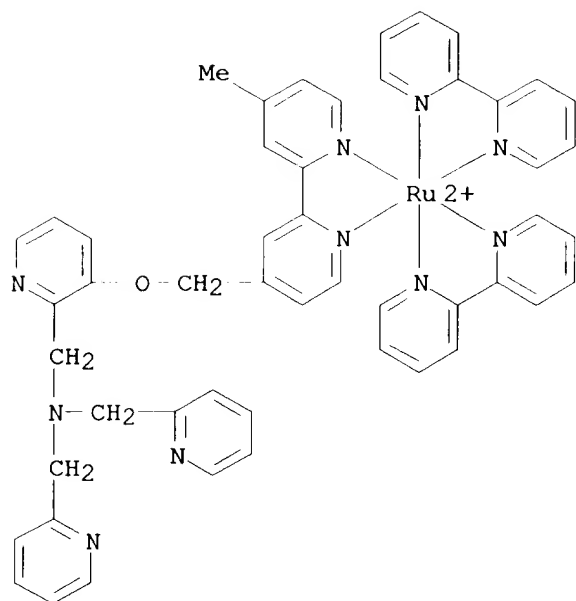
CN Ruthenium(2+), bis(2,2'-bipyridine- κ .N1, κ .N1') [3-[(4'-methyl[2,2'-bipyridin]-4-yl- κ .N1, κ .N1')methoxy]-N,N-bis(2-pyridinylmethyl)-2-pyridinemethanamine]-, (OC-6-33)-, bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

CM 1

CRN 344367-62-0

CMF C50 H44 N10 O Ru

CCI CCS

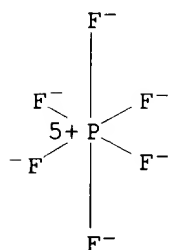


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS

IT **344367-67-5P**

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

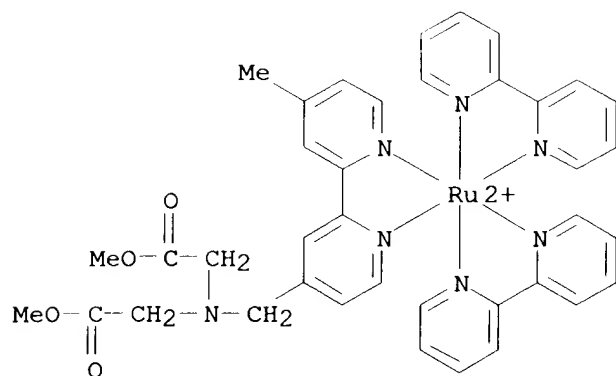
(prepn. and reactant for prepn. of manganese ruthenium complexes with bipyridine having dipicolylamine or aminodiacetic acid pendants)

RN 344367-67-5 HCAPLUS

CN Ruthenium(2+), bis(2,2'-bipyridine-.kappa.N1,.kappa.N1') [methyl N-(2-methoxy-2-oxoethyl)-N-[(4'-methyl[2,2'-bipyridine]-4-yl-.kappa.N1,.kappa.N1')methyl]glycinate]-, (OC-6-33)-, bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

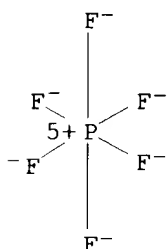
CM 1

CRN 344367-66-4
 CMF C38 H37 N7 O4 Ru
 CCI CCS



CM 2

CRN 16919-18-9
 CMF F6 P
 CCI CCS



REFERENCE COUNT: 50 THERE ARE 50 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 6 OF 17 HCAPLUS COPYRIGHT 2003 ACS
 ACCESSION NUMBER: 1999:624675 HCAPLUS
 DOCUMENT NUMBER: 131:237143
 TITLE: **Luminescent** receptors for sugar, based on metal ligand complexes
 INVENTOR(S): Terpetschnig, Ewald
 PATENT ASSIGNEE(S): Germany
 SOURCE: Ger. Offen., 6 pp.
 CODEN: GWXXBX
 DOCUMENT TYPE: Patent
 LANGUAGE: German
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 19811963	A1	19990923	DE 1998-19811963	19980319

PRIORITY APPLN. INFO.: DE 1998-19811963 19980319

OTHER SOURCE(S): MARPAT 131:237143

AB **Luminescent** receptors, based on Ru(II), Os(II), Re(I), Cu(II) and Fe(II) bipyridine, bipyrazine, bipyrimidine, phenanthroline or terpyridine complexes in which 1 of the ligands have .gtoreq. 1 boronic acid functional group, are claimed which are suitable for the selective detection of sugars, in particular glucose. For example, [Ru(bpy)2L](PF6)2 (L = 4-(R-substituted)-4'-methyl-2,2'-bipyridine, where R = CH2NMeCH2-o-C6H4B(OH)2) were prepd. by initially prepg. 4-(methylaminomethyl)-4'-methyl-2,2'-bipyridine hydrochloride from 4-formyl-4'-methyl-2,2'-bipyridine, followed by reaction with CHO-o-C6H4B(OH)2 to give L which was reacted with Ru(bpy)2Cl2.

IT **244006-64-2P**
 RL: ANT (Analyte); SPN (Synthetic preparation); ANST (Analytical study);
 PREP (Preparation)
 (prepn. as detector for sugars)

RN 244006-64-2 HCAPLUS

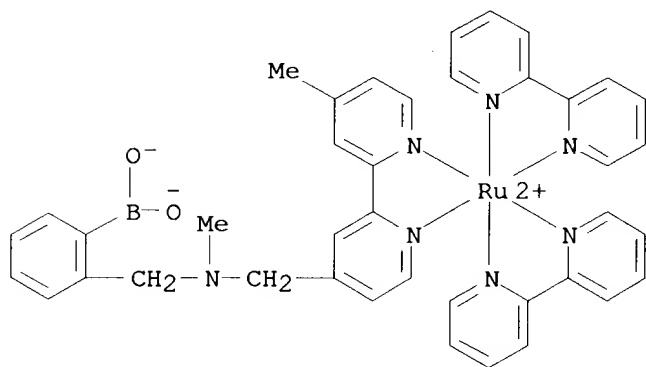
CN Ruthenium, bis(2,2'-bipyridine-.kappa.N1,.kappa.N1')[[2-[[methyl[(4'-methyl[2,2'-bipyridin]-4-yl-.kappa.N1,.kappa.N1')methyl]amino]methyl]phenyl]boronato(2-)]-, (OC-6-33)-, bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

CM 1

CRN 244006-63-1

CMF C40 H36 B N7 O2 Ru

CCI CCS

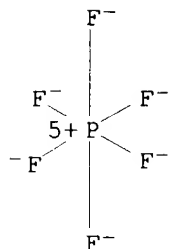


CM 2

CRN 16940-81-1

CMF F6 P . H

CCI CCS



● H⁺

L17 ANSWER 7 OF 17 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1999:274343 HCAPLUS

DOCUMENT NUMBER: 131:70549

TITLE: pH sensors based on **luminescent** ruthenium(II) .alpha.-diimine complexes with diethylaminomethyl sensing groups

AUTHOR(S): Xu, Wenying; Mehlmann, John; Rice, Jason; Collins, James E.; Fraser, Cassandra L.; Demas, J. N.; DeGraff, A.; Bassetti, Mauro

CORPORATE SOURCE: Dep. Chem., Univ. Charlottesville, Charlottesville, VA, 22904, USA

SOURCE: Proceedings of SPIE-The International Society for Optical Engineering (1999), 3534(Environmental Monitoring and Remediation Technologies), 456-465
CODEN: PSISDG; ISSN: 0277-786X

PUBLISHER: SPIE-The International Society for Optical Engineering

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A study of the pH sensing, characteristics of long lived Ru(II) complexes on a solid polymer support is presented. The systems selected were [Ru(Ph2phen)2DEAMbpy]2+ and [Ru(Ph2phen)2(DEAM)2bpy]2+ (Ph2phen = 4,7-diphenyl-1,10-phenanthroline, DEAMbpy = 4-methyl-4'-(diethylamino)methyl-2,2'-bipyridine, (DEAM)2bpy = 4,4'-bis(diethylaminomethyl)-2,2'-bipyridine). The support is a very hydrophobic cyclic siloxane crosslinked with hydrophilic polyethylene oxide. Sensor prepn., based on hydrophobic binding of the sensor mol. to the polymer's hydrophobic pockets, is fast and convenient. While in soln. both complexes have large changes in responses in the physiol. pH range of 7-8, the polymer bound complexes show significantly different responses with pH. Either the magnitude of the response is reduced to too low a level to be valuable, or the pH of optimum response is shifted outside the 7-8 region. This muting and shifting of response is quite different from that obsd. for other pH sensor complexes on the same support. The possible origins of the effect are discussed, in spite of being unsuitable in the current formulation for physiol. pHs, [Ru(Ph2phen)2(DEAM)2bpy]2- shows useful response in both the 3-5 and 8-10 pH ranges.

IT **229155-96-8P**

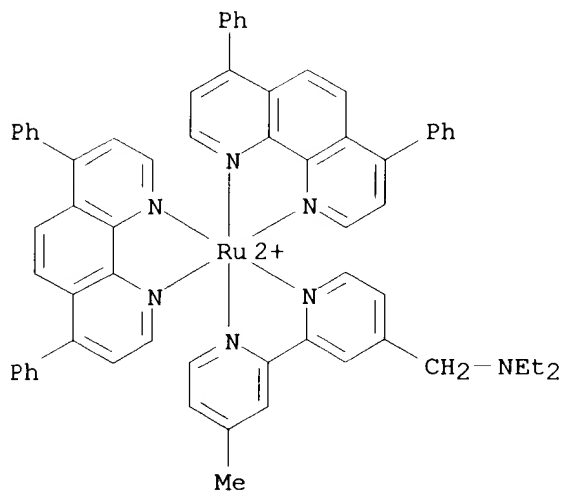
RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)

(binding to polymer film; pH sensors based on **luminescent**

ruthenium(II) .alpha.-diimine complexes with diethylaminomethyl sensing groups)

RN 229155-96-8 HCAPLUS

CN Ruthenium(2+), (N,N-diethyl-4'-methyl[2,2'-bipyridine]-4-methanamine-.kappa.N1,.kappa.N1')bis(4,7-diphenyl-1,10-phenanthroline-.kappa.N1,.kappa.N10)-, dichloride, (OC-6-31)- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 8 OF 17 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1999:213268 HCAPLUS

DOCUMENT NUMBER: 130:320005

TITLE: pH-Dependent Excited-State Dynamics of [Ru(bpy)₃]²⁺-Modified Amino Acids: Effects of an Amide Linkage and Remote Functional Groups

AUTHOR(S): Geisser, Bernd; Ponce, Adrian; Alsfasser, Ralf

CORPORATE SOURCE: Institute for Inorganic Chemistry, University of Erlangen-Nuernberg, Erlangen, 91058, Germany

SOURCE: Inorganic Chemistry (1999), 38(9), 2030-2037

CODEN: INOCAJ; ISSN: 0020-1669

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The pH-dependent photophys. properties of polypyridyl ruthenium-substituted amino acids were investigated by steady-state and time-resolved **luminescence** spectroscopy. [H3N-DAPA(Rub2m)-OH](PF₆)₃ (1), [H3N-DABA(Rub2m)-OH](PF₆)₃ (2), [H3N-Orn(Rub2m)-OH](PF₆)₃ (3), and [H3N-Lys(Rub2m)-OH](PF₆)₃ (4) were obtained by formation of an amide link between the .omega.-NH₂ group of the resp. com. available amino acid and [Rub2(m-OH)]²⁺ (b = bipyridine, m-OH = 4'-methyl-2,2'-bipyridine-4-carboxylic acid). Due to the absence of significant electronic

interactions between the ruthenium chromophore and the amino acid moieties, the energetics and extinction coeffs. of the absorption spectra of 1-4 do not change as a function of pH. The **luminescence** intensities of these complexes, however, show a marked dependence on pH. At low pH (<2), quenching via excited-state protonation of the amide link leads to short lifetimes. In the pH 2-8 range, the lifetimes depend on the amino acid side chain length of the complex. At high pH (>9), lifetimes are approaching that of [Ru(bpy)₃]²⁺, suggesting that the amino acid moiety has a negligible effect on nonadiabatic pathways in the excited-state decay of the ruthenium moiety. The authors' results are discussed with respect to the rapidly growing interest in ruthenium-substituted amino acids as spectroscopic and mechanistic tools in biol. systems.

IT 221643-07-8P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (prepn. and pH-dependent photophys. properties of ruthenium bipyridine amino acid deriv. complexes)

RN 221643-07-8 HCAPLUS

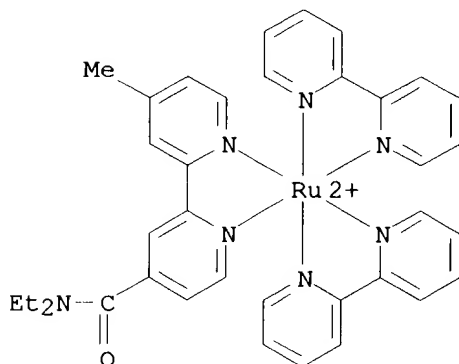
CN Ruthenium(2+), bis(2,2'-bipyridine-.kappa.N1,.kappa.N1')(N,N-diethyl-4'-methyl[2,2'-bipyridine]-4-carboxamide-.kappa.N1,.kappa.N1')-, (OC-6-33)-, bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

CM 1

CRN 221643-06-7

CMF C36 H35 N7 O Ru

CCI CCS

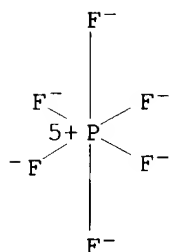


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



REFERENCE COUNT: 55 THERE ARE 55 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 9 OF 17 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1999:46667 HCAPLUS

DOCUMENT NUMBER: 130:209906

TITLE: Automated Solid-Phase Synthesis of Site-Specifically Labeled Ruthenium-Oligonucleotides

AUTHOR(S): Khan, Shoeb I.; Beilstein, Amy E.; Grinstaff, Mark W.

CORPORATE SOURCE: Department of Chemistry P. M. Gross Chemical Laboratory, Duke University, Durham, NC, 27708, USA

SOURCE: Inorganic Chemistry (1999), 38(3), 418-419

CODEN: INOCAJ; ISSN: 0020-1669

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A facile, solid-phase, and fully automated method for the construction of site-specifically metallolabeled oligonucleotides is reported using a novel metallonucleoside phosphoramidite. The absorption spectrum of the ruthenium-labeled oligonucleotide single strand, 5'-TCAACAGUTTGTAGCA-3', exhibits the characteristic metal-ligand charge-transfer band (1MLCT-1A1), centered at 450 nm, analogous to Ru(bpy)3²⁺. Importantly, these results demonstrate that ruthenium-modified oligonucleotides form stable **luminescent** duplexes at room temp.

IT 220722-57-6P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(solid-phase synthesis of site-specifically labeled ruthenium-oligonucleotides duplexes)

RN 220722-57-6 HCAPLUS

CN Ruthenium(2+), bis(2,2'-bipyridine-.kappa.N1,.kappa.N1')[5'-O-[bis(4-methoxyphenyl)phenylmethyl]-2'-deoxy-5-[3-[[(4'-methyl[2,2'-bipyridin]-4-yl-.kappa.N1,.kappa.N1') carbonyl]amino]-1-propynyl]uridine 3'-[2-cyanoethyl bis(1-methylethyl)phosphoramidite]]-, (OC-6-33)-, bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

CM 1

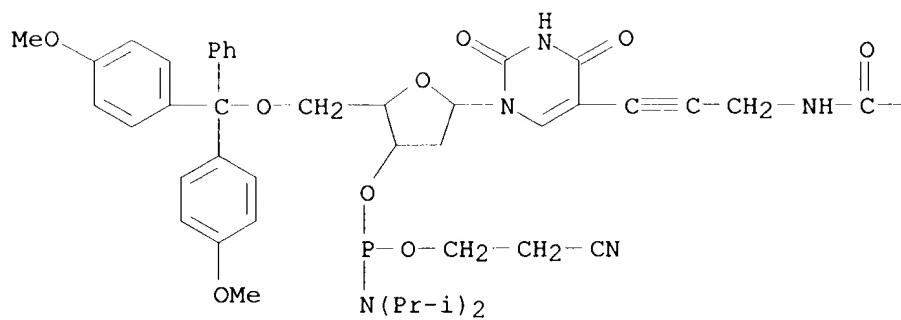
CRN 220722-56-5

CMF C74 H74 N11 O9 P Ru

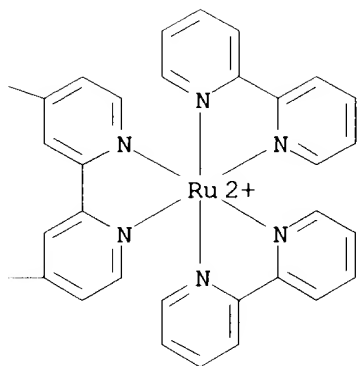
CCI CCS

PAGE 1-A

Me



PAGE 1-B

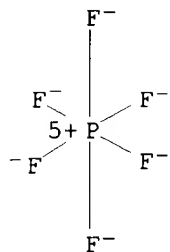


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



REFERENCE COUNT: 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 10 OF 17 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1999:26629 HCAPLUS

DOCUMENT NUMBER: 130:197065

TITLE: Synthesis, Characterization, Electrochemistry, and EQCM Studies of Polyamidoamine Dendrimers Surface-Functionalized with Polypyridyl Metal Complexes

AUTHOR(S): Storrier, Gregory D.; Takada, Kazutake; Abruna, Hector D.

CORPORATE SOURCE: Department of Chemistry Baker Laboratory, Cornell University, Ithaca, NY, 14853-1301, USA

SOURCE: Langmuir (1999), 15(3), 872-884

CODEN: LANGD5; ISSN: 0743-7463

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Polyamidoamine dendrimers have been surface-modified via peptide coupling with pyridyl, bipyridyl, and terpyridyl ligands to give the analogous polypyridyl dendrimer ligands in high yield. Complexation of the pendant chelating groups with appropriate ruthenium(II) precursor complexes yielded dendrimers surface-functionalized with tris(bipyridyl)ruthenium(II) or bis(terpyridyl)ruthenium(II) pendant complexes. Electrochem. studies of the dendrimer complexes show metal-centered and ligand-centered redox couples. These mols. also adsorb onto platinum electrodes, and the deposition process and the properties of the resulting films have been investigated with the electrochem. quartz crystal microbalance. The resulting films exhibit morphol. changes with potential that can be attributed to the deposition or dissoln. of the dendrimer and/or to ejection or incorporation of counterions and/or solvent into the film. A no. of the electrodeposited films exhibited charge trapping peaks. Dendrimers contg. terminal tris(bipyridyl)ruthenium(II) complexes exhibited room-temp. **luminescence**, while these and dendrimers with terminal bis(terpyridyl)ruthenium(II) complexes exhibited **luminescence** in a rigid butyronitrile matrix at 77 K.

IT 220720-42-3P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (synthesis, characterization, electrochem., and electrochem. quartz crystal microbalance studies of polyamidoamine dendrimers surface-functionalized with polypyridyl ruthenium complexes)

RN 220720-42-3 HCAPLUS

CN Ruthenium(8+), octakis(2,2'-bipyridine-.kappa.N1,.kappa.N1')[.mu.4-

[N,N',N'',N'''-[1,2-ethanediylbis[nitrilobis[(1-oxo-3,1-propanediyl)imino-2,1-ethanediyl]]]tetrakis[4'-methyl[2,2'-bipyridine]-4-butanamide-.kappa.N1,.kappa.N1']]]tetra-, octakis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

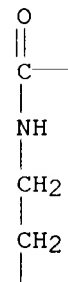
CM 1

CRN 220720-41-2

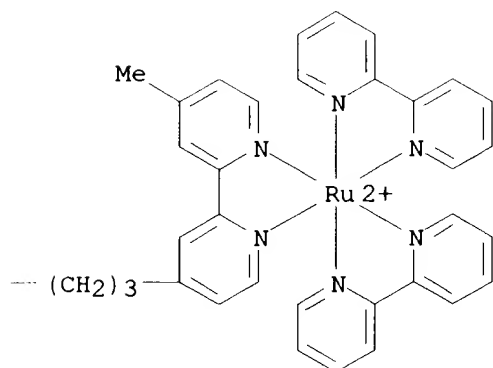
CMF C162 H168 N34 O8 Ru4

CCI CCS

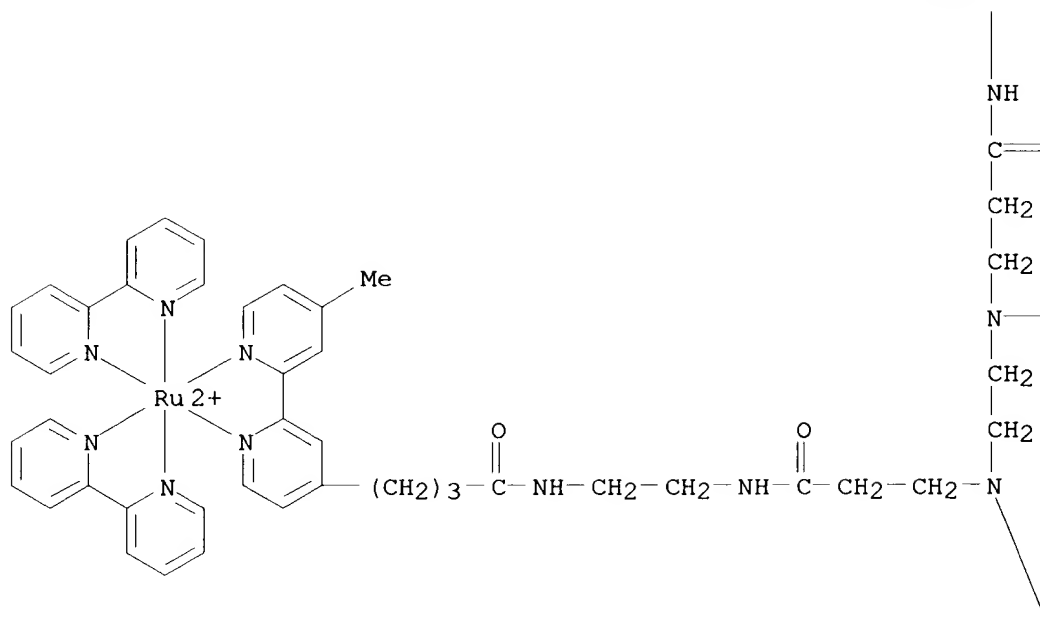
PAGE 1-A



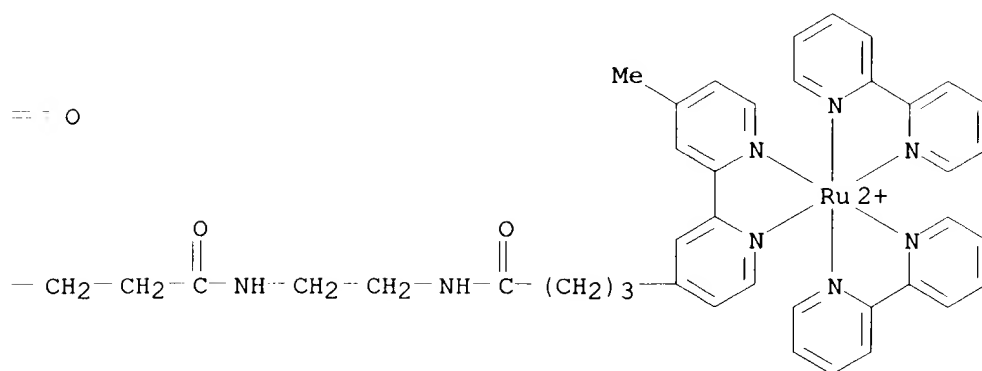
PAGE 1-B



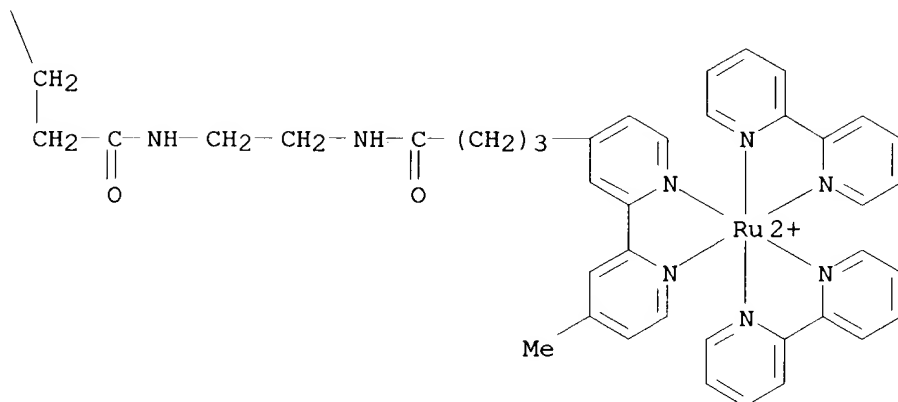
PAGE 2-A



PAGE 2-B



PAGE 3-B

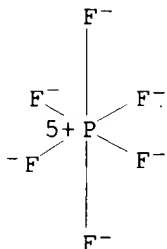


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



REFERENCE COUNT: 95 THERE ARE 95 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 11 OF 17 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1997:500129 HCAPLUS

DOCUMENT NUMBER: 127:154474

TITLE: Binuclear Ruthenium-Manganese Complexes as Simple Artificial Models for Photosystem II in Green Plants
 AUTHOR(S): Sun, Licheng; Berglund, Helena; Davydov, Roman; Norrby, Thomas; Hammarstroem, Leif; Korall, Peter; Boerje, Anna; Philouze, Christian; Berg, Katja; Tran, Anh; Andersson, Michael; Stenhagen, Gunnar; Maartensson, Jerker; Almgren, Mats; Styling, Stenbjoern; Aakermark, Bjoern

CORPORATE SOURCE: Department of Chemistry Organic Chemistry, Royal Institute of Technology, Stockholm, S-100 44, Swed.

SOURCE: Journal of the American Chemical Society (1997), 119(30), 6996-7004
 CODEN: JACSAT; ISSN: 0002-7863

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB As part of a project aimed at developing models for photosystem II (PSII) in green plants, we have prepd. a series of model compds. (7, 8, and 13). In these compds., a photosensitizer, ruthenium(II) tris(bipyridyl) complex (to mimic the function of P680 in PSII), was covalently linked to a manganese(II) ion through different bridging ligands. The structures of the compds. were characterized by EPR measurements and electrospray ionization mass spectrometry. The interaction between the ruthenium and manganese moieties within the complex was probed by steady-state and time-resolved emission measurements. When the binuclear complexes are exposed to flash photolysis in the presence of an electron acceptor such as methylviologen (MV²⁺), it could be shown that after the initial electron transfer from the excited state of Ru(II) in compd. 7, forming Ru(III) and MV^{•+}, an intramol. electron transfer from coordinated Mn(II) to the photogenerated Ru(III) occurred with a first-order rate const. of 1.8 .times. 10⁵ s⁻¹, regenerating Ru(II). This is believed to be the first supramol. system where a manganese complex has been used as an electron donor to a photo-oxidized photosensitizer. Possible extensions to develop the manganese donor, and thus to approach the function of reaction center in PSII, are indicated.

IT 193222-75-2P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(prepn. and photophys. studies of binuclear ruthenium-manganese

complexes as simple artificial models for Photosystem II in green plants)

RN 193222-75-2 HCAPLUS

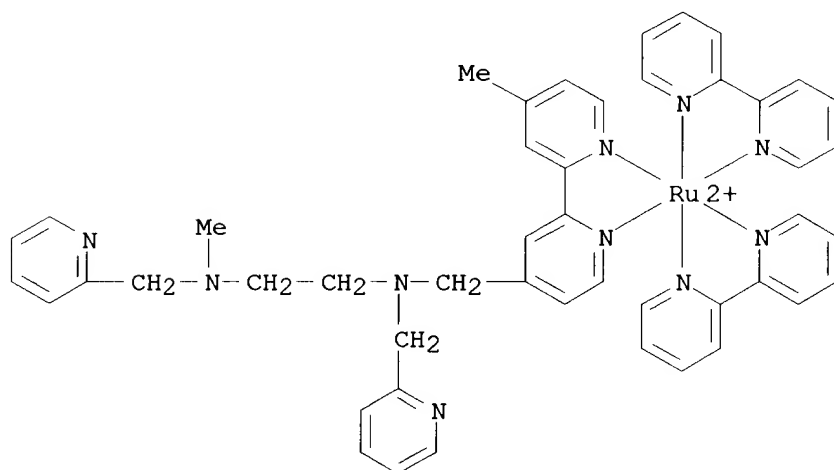
CN Ruthenium(2+), bis(2,2'-bipyridine-.kappa.N1,.kappa.N1') [N-methyl-N'-[(4'-methyl[2,2'-bipyridin]-4-yl-.kappa.N1,.kappa.N1')methyl]-N,N'-bis(2-pyridinylmethyl)-1,2-ethanediamine]-, (OC-6-33)-, bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

CM 1

CRN 193222-74-1

CMF C47 H46 N10 Ru

CCI CCS

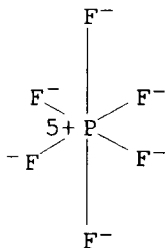


CM 2

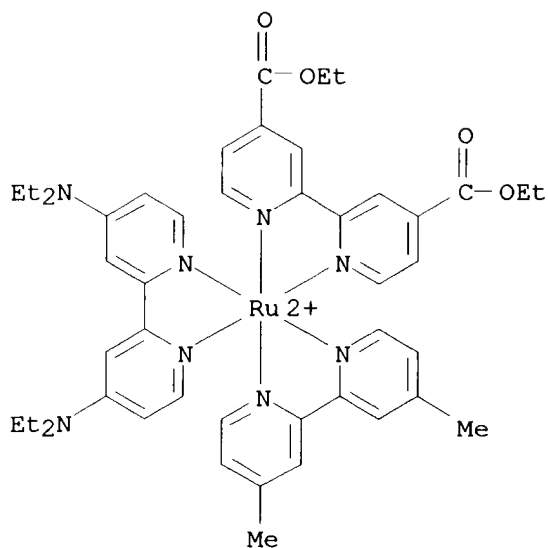
CRN 16919-18-9

CMF F6 P

CCI CCS



ACCESSION NUMBER: 1995:903094 HCAPLUS
 DOCUMENT NUMBER: 123:305147
 TITLE: Designed Synthesis of Mononuclear Tris(heteroleptic) Ruthenium Complexes Containing Bidentate Polypyridyl Ligands
 AUTHOR(S): Anderson, Peter A.; Deacon, Glen B.; Haarmann, Klaus H.; Keene, F. Richard; Meyer, Thomas J.; Reitsma, David A.; Skelton, Brian W.; Strouse, Geoffrey F.; Thomas, Nicholas C.; et al.
 CORPORATE SOURCE: Department of Molecular Sciences, James Cook University of North Queensland, Townsville, 4811, Australia
 SOURCE: Inorganic Chemistry (1995), 34(24), 6145-57
 CODEN: INOCAJ; ISSN: 0020-1669
 PUBLISHER: American Chemical Society
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB A general synthetic methodol. is reported for tris(bidentate)ruthenium(II) complexes contg. three different polypyridyl ligands, based on the sequential addn. of the ligands to the oligomer [Ru(CO)2Cl2]n. The tris(heteroleptic) complexes were characterized by FAB mass spectrometry and NMR spectroscopy. An x-ray crystal structure detn. was made for [Ru(Me2bpy)(phen)(bpa)](PF6)2.cntdot.C6H14 [C40H43F12N7P2Ru, M = 1062.8; Me2bpy = 4,4'-dimethyl-2,2'-bipyridine, phen = 1,10-phenanthroline, bpa = bis(2-pyridyl)amine]: triclinic, space group P.hivin.1, a 14.57(3), b 13.50(3), c 12.73(3) .ANG., .alpha. 68.6(2), .beta. 63.5(1), .gamma. 79.8(2).degree., Z = 2. Aspects of the electrochem., spectroscopy, and photophysics of the tris(heteroleptic) species are discussed.
 IT **169832-69-3P 169832-72-8P**
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (prepn., electrochem. redox potentials and photophysics)
 RN 169832-69-3 HCAPLUS
 CN Ruthenium(2+), (diethyl [2,2'-bipyridine]-4,4'-dicarboxylate-N1,N1')(4,4'-dimethyl-2,2'-bipyridine-N,N')(N,N,N',N'-tetraethyl[2,2'-bipyridine]-4,4'-diamine-N1,N1')-, (OC-6-32)-, bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)
 CM 1
 CRN 169832-68-2
 CMF C46 H54 N8 O4 Ru
 CCI CCS

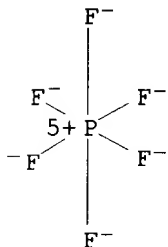


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



RN 169832-72-8 HCAPLUS

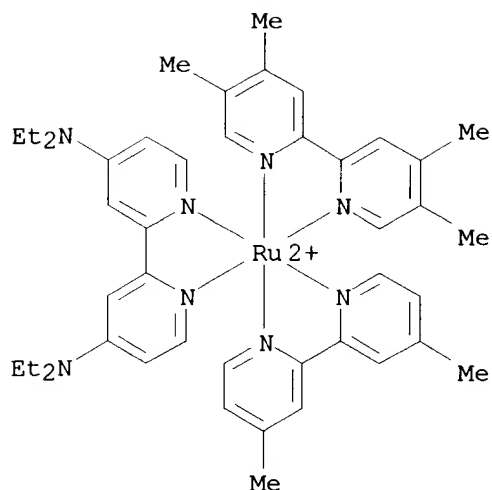
CN Ruthenium(2+), (4,4'-dimethyl-2,2'-bipyridine-N,N') (N,N,N',N'-tetraethyl[2,2'-bipyridine]-4,4'-diamine-N1,N1') (4,4',5,5'-tetramethyl-2,2'-bipyridine-N,N')-, (OC-6-32)-, bis[hexafluorophosphate(1-)] (9CI)
(CA INDEX NAME)

CM 1

CRN 169832-71-7

CMF C44 H54 N8 Ru

CCI CCS

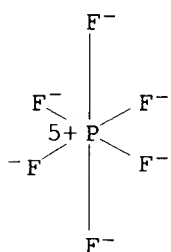


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



L17 ANSWER 13 OF 17 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1995:853965 HCAPLUS

DOCUMENT NUMBER: 123:276977

TITLE: A comparative study of PCR product detection and quantitation by **electrochemiluminescence** and fluorescence

AUTHOR(S): Yu, Hao; Bruno, John G.; Cheng, Tu-chen; Calomiris, Jon J.; Goode, Michael T.; Gatto-Menking, Deborah L.

CORPORATE SOURCE: Optech Corporation, San Antonio, TX, 78229, USA

SOURCE: Journal of Bioluminescence and Chemiluminescence (1995), 10(4), 239-45

CODEN: JBCHE7; ISSN: 0884-3996

PUBLISHER: Wiley

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Amplification and detection of target DNA sequences are made possible in a

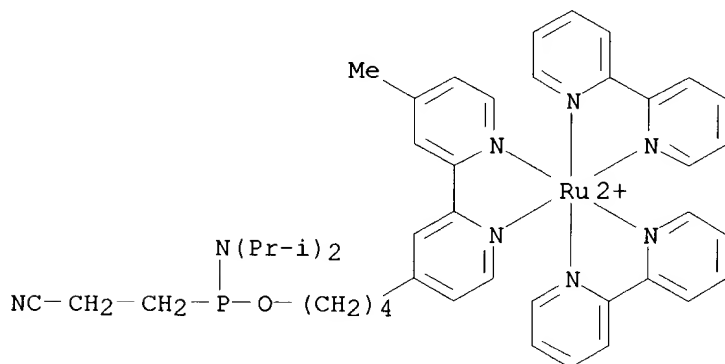
polymerase chain reaction (PCR) by using a mixt. of biotinylated and ruthenium(II) trisbipyridal ($\text{Ru}(\text{bpy})_3^{2+}$)-end-labeled primers. In this way, biotin for capture and $\text{Ru}(\text{bpy})_3^{2+}$ for detection are directly incorporated into the PCR product obviating subsequent probe hybridization. PCR of a bacterial DNA template from *Alteromonas* species strain JD6.5 using a cocktail of biotin- and $\text{Ru}(\text{bpy})_3^{2+}$ -labeled primers amplified a 1 kilobase region. Serial diln. of PCR product followed by magnetic sepn. with streptavidin (SA)-coated magnetic beads and an **electrochemiluminescence** (ECL) assay using the semi-automated QPCR System 5000 demonstrated sensitive (pg range) DNA detection. ECL assay of probe hybridization to a human immunodeficiency virus (HIV) sequence also produced pg level sensitivity. Quant. DNA detn. by ECL assay correlated well with visual detection of DNA in electrophoretic gels. However, DNA detection by ECL assay was 10 to 100 times more sensitive than conventional ethidium bromide staining. The combination of DNA-based magnetic sepn. with ECL assay provides a very sensitive and rapid method of quantitating DNA which, owing to its rapid and facile nature, may have many applications in the research, environmental monitoring, industrial and clin. fields.

IT **151198-48-0D**, oligonucleotide conjugates

RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(as PCR primers and hybridization probes; PCR product detection and quantitation by **electrochemiluminescence** and fluorescence)

RN 151198-48-0 HCAPLUS

CN Ruthenium(2+), bis(2,2'-bipyridine-N,N') [4-(4'-methyl[2,2'-bipyridin]-4-yl)butyl P-(2-cyanoethyl)-N,N-bis(1-methylethyl)phosphonamidite]-, (OC-6-33)- (9CI) (CA INDEX NAME)



L17 ANSWER 14 OF 17 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1994:568971 HCAPLUS

DOCUMENT NUMBER: 121:168971

TITLE: Synthesis and spectroscopic characterization of covalently linked dinuclear ruthenium bipyridyl complexes

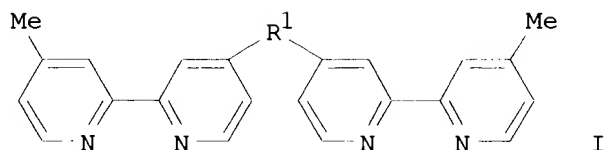
AUTHOR(S): Sasaki, Isabelle; Imberdis, Michele; Gaudemer, Alain; Drahi, Bruno; Azhari, Driss; Amouyal, Edmond

CORPORATE SOURCE: Lab. Chim. Bioorg. Bioinorg., Univ. Paris-Sud, Orsay, 91405, Fr.

SOURCE: New Journal of Chemistry (1994), 18(6), 759-64

DOCUMENT TYPE:
LANGUAGE:
GI

CODEN: NJCHE5; ISSN: 1144-0546
Journal
English



AB The synthesis and characterization of new ligands 4-methyl-4'-R-2,2'-bipyridine (R = decyl, N-heptylaminomethyl) and I (R1 = 1,10-decanediyl, CH2NH(CH2)8NHCH2, CH2NH(CH2)3NMe(CH2)3NHCH2) derived from 4,4'-dimethyl-2,2'-bipyridine and of the corresponding mono- and dinuclear Ru(II) bipyridyl complexes as potential ligands of DNA are described. The absorption and **luminescence** data show that the 2 Ru subunits covalently linked by different flexible chains are not electronically coupled, neither in the ground state nor in the excited state. The possibility of a double interaction of these supramol. systems with DNA is discussed.

IT **157527-08-7P 157527-14-5P**

RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. and absorption and emission electronic spectra of)

RN 157527-08-7 HCAPLUS

CN Ruthenium(4+), tetrakis(2,2'-bipyridine-N,N') [μ-[N-methyl-N'-[(4'-methyl[2,2'-bipyridin]-4-yl)methyl]-N-[3-[[[4'-methyl[2,2'-bipyridin]-4-yl)methyl]amino]propyl]-1,3-propanediamine]]di-, tetrakis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

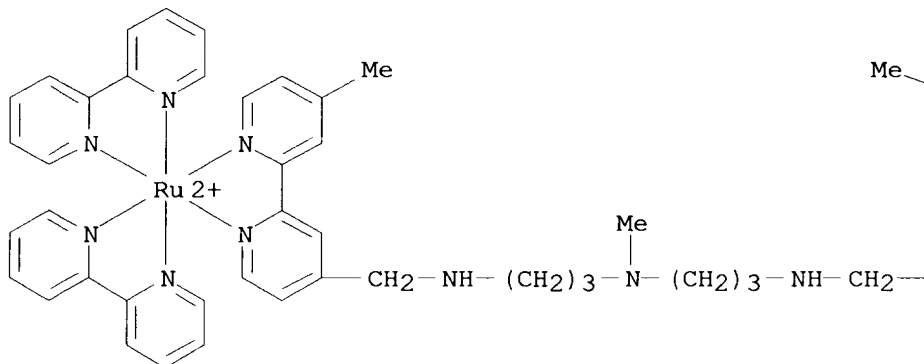
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CRN 157527-07-6

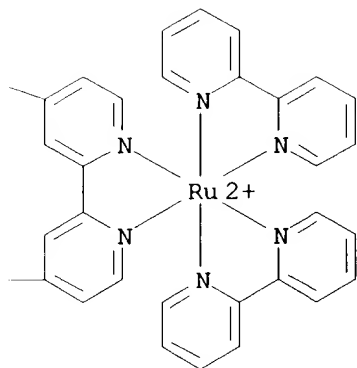
CMF C71 H71 N15 Ru2

CCI CCS

PAGE 1-A



PAGE 1-B

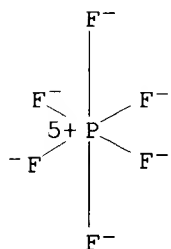


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



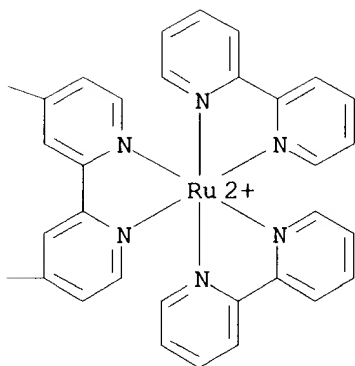
RN 157527-14-5 HCAPLUS

CN Ruthenium(4+), tetrakis(2,2'-bipyridine-N,N') [mu.-[N-methyl-N'-[(4'-methyl[2,2'-bipyridin]-4-yl)methyl]-N-[3-[[4'-methyl[2,2'-bipyridin]-4-yl)methyl]amino]propyl]-1,3-propanediamine]]di-, tetrachloride (9CI) (CA INDEX NAME)

Chemical structure of a ruthenium(II) complex. The central Ru(II) ion is coordinated by two bipyridine ligands and two 2-methyl-4-((3-(dimethylamino)propyl)amino)pyridine ligands. The dimethylamino group is shown as NMe₂.

● 4 Cl⁻

PAGE 1-B



LANGUAGE: English

AB A high-sensitivity nonisotopic system has been developed for post-PCR product detection. The probe-based detection system exploits a **chemiluminescent** reaction that takes place on the electrode surface in an electrochem. cell. The detection system incorporates a biotin-streptavidin capture reaction onto a solid support that permits fast post-PCR product detection at the attomole level. The system precision is within 5% relative std. deviation over a linear dynamic range of greater than three orders of magnitude. In this paper, the principles and features of the **electrochemiluminescent**-based detection system, together with its application to PCR product quantitation, are described in detail.

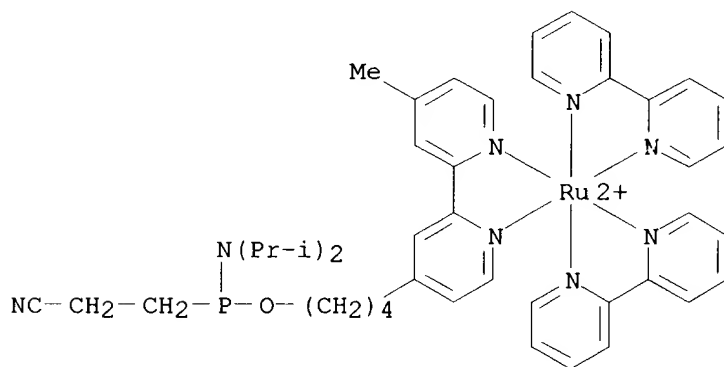
IT **151198-48-0**

RL: USES (Uses)

(DNA labeling with, for **electrochemiluminescence** based detection of PCR products)

RN 151198-48-0 HCAPLUS

CN Ruthenium(2+), bis(2,2'-bipyridine-N,N')[4-(4'-methyl[2,2'-bipyridin]-4-yl)butyl P-(2-cyanoethyl)-N,N-bis(1-methylethyl)phosphonamidite]-, (OC-6-33)- (9CI) (CA INDEX NAME)



L17 ANSWER 16 OF 17 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1993:619162 HCAPLUS

DOCUMENT NUMBER: 119:219162

TITLE: **Electrochemiluminescent** label for DNA probe assays

INVENTOR(S): Gudibande, Satyanarayana R.; Kenten, John H.

PATENT ASSIGNEE(S): Igen, Inc., USA

SOURCE: PCT Int. Appl., 62 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9312256	A1	19930624	WO 1992-US10480	19921207
W: AU, CA, JP, KR				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				

ZA 9209351	A	19930604	ZA 1992-9351	19921202
IL 103960	A1	20000831	IL 1992-103960	19921203
IL 125465	A1	20001031	IL 1998-125465	19921203
AU 9332388	A1	19930719	AU 1993-32388	19921207
AU 661757	B2	19950803		
EP 667919	A1	19950823	EP 1993-900868	19921207
EP 667919	B1	20010926		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE				
JP 3067030	B2	20000717	JP 1993-510980	19921207
JP 07503947	T2	19950427		
AT 206170	E	20011015	AT 1993-900868	19921207
ES 2164069	T3	20020216	ES 1993-900868	19921207
US 5610017	A	19970311	US 1995-461038	19950605
US 5686244	A	19971111	US 1995-461645	19950605
US 5597910	A	19970128	US 1995-479817	19950607

PRIORITY APPLN. INFO.:

US 1991-805537	A	19911211
IL 1992-103960	A3	19921203
WO 1992-US10480	A	19921207
US 1994-307026	B3	19940915

OTHER SOURCE(S): MARPAT 119:219162

AB The title labels comprise Ru, Os, or Re complexed with 3 heterocyclic ring systems, e.g., bipyridyl, the ring system being substituted with .gtoreq.l (CH₂)_nOPab or (CH₂)_nX(CH₂)_nOPab [n=1-20; X=O,S,SO₂,COO,CONH; a,b=N(CH(Me)₂)₂,NCH(Me)₂,O(CH₂)₂CN,OMe,morpholino, and a.noteq.b]. The metal complex may be attached to an oligonucleotide by the a or b group to provide an electroluminescent hybridization probe or PCR primer. A Ru-contg. label was prepd., conjugated to oligonucleotides, and used in PCR amplification of human interferon- γ gene, human papilloma virus DNA, and HIV-1 DNA. Use of such tagged oligonucleotides for hybridization was described. The effect of the label on hybridization kinetics and melting behavior was detd. The labeled oligonucleotides were found to be stable to I oxidn. and NH₃ hydrolysis, and the label did not interact with DNA and alter binding affinity of the labeled probes.

IT **144642-43-3P**

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and reaction of, in **electrochemiluminescent** label
prepn.)

RN 144642-43-3 HCAPLUS

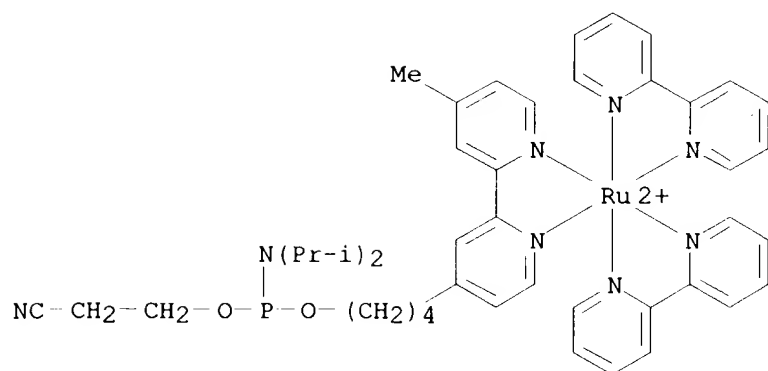
CN Ruthenium(2+), bis(2,2'-bipyridine-N,N') [2-cyanoethyl 4-(4'-methyl[2,2'-bipyridin]-4-yl)butyl bis(1-methylethyl)phosphoramidite]-, (OC-6-33)-, bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

CM 1

CRN 144642-42-2

CMF C44 H51 N8 O2 P Ru

CCI CCS

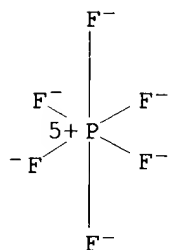


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



L17 ANSWER 17 OF 17 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1992:646196 HCAPLUS

DOCUMENT NUMBER: 117:246196

TITLE: Improved **electrochemiluminescent** label for
DNA probe assays: rapid quantitative assays of HIV-1
polymerase chain reaction products

AUTHOR(S): Kenten, J. H.; Gudibande, S.; Link, J.; Willey, J. J.;
Curfman, B.; Major, E. O.; Massey, R. J.

CORPORATE SOURCE: IGEN Inc., Rockville, MD, 20852, USA

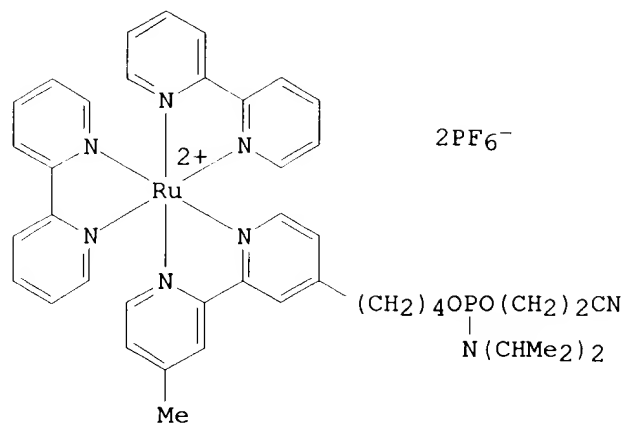
SOURCE: Clinical Chemistry (Washington, DC, United States)
(1992), 38(6), 873-9

CODEN: CLCHAU; ISSN: 0009-9147

DOCUMENT TYPE: Journal

LANGUAGE: English

GI



I

AB The characterization and utility of a new **electrochemiluminescent** (ECL) label for oligonucleotides, utilizing phosphoramidite chem. is described. This phosphoramidite of the tris(2,2-bipyridine)ruthenium(II) complex, bis(2,2-bipyridine){4-[4-(2-cyanoethoxy-N,N-diisopropylamino)phosphinoxybutyl]4'-methyl}2,2-bipyridine ruthenium(II) dihexafluorophosphate or Origin.RTM. phosphoramidite (I), enables the direct incorporation of the label during automated DNA synthesis. Efficiency of this automated synthesis allows the direct utilization of probes without further purifn. Introduction of this labeling group is reproducible, and the ECL signal recovered is not influenced by hybridization. Furthermore, neither hybridization kinetics nor hybrid stability was affected by the authors label. The authors also demonstrate the utility of these labels for the development of rapid assays with oligonucleotides direct from automated synthesis. The clin. utility of these labeled oligonucleotides is shown with assays of total nucleic acid, extd. from peripheral blood lymphocytes of patients with acquired immunodeficiency syndrome (AIDs), to detect the human immunodeficiency virus (HIV-1). The results demonstrate the ability of the assay to quantify 30-2000 copies of HIV1 gag genes and to rapidly detect (<45 min) HIV-1 gag genes in a nonseparation assay. The application of this assay to clin. samples demonstrates the utility of these assays for rapid and quant. anal.

IT **144642-43-3P**, Origen phosphoramidite

RL: PREP (Preparation)

(prepn. of and DNA probes labeled with, HIV-1 virus PCR product quantitation assay using)

RN 144642-43-3 HCAPLUS

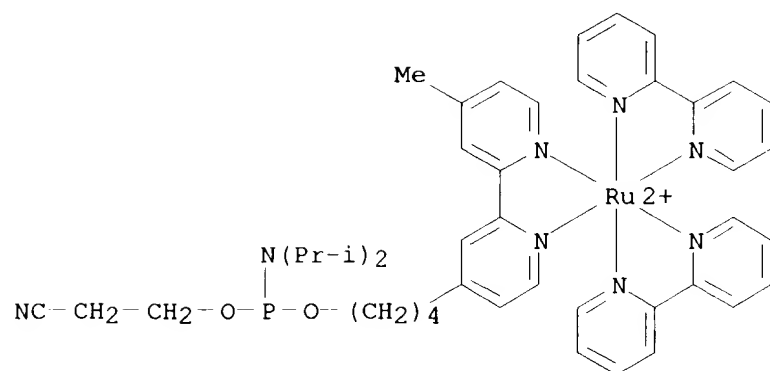
CN Ruthenium(2+), bis(2,2'-bipyridine-N,N')[2-cyanoethyl 4-(4'-methyl[2,2'-bipyridin]-4-yl)butyl bis(1-methylethyl)phosphoramidite]-, (OC-6-33)-, bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

CM 1

CRN 144642-42-2

CMF C44 H51 N8 O2 P Ru

CCI CCS



CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS

